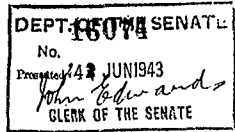


1942 - 1943



THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

PAPER

TO BE LAID ON THE TABLE OF

THE SENATE

R E P O R T

of the

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

relating to

NEWNES & BAERAMI SHALE OIL PROPOSALS

1942-43.

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA.

PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS.

REPORT

RELATING TO

NEWNES AND BAERAMI SHALE
OIL PROPOSALS.

By Authority :

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(Printed in Australia.)

F.1358.

MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

(Tenth Committee).

SENATOR CHARLES HENRY BRAND (Chairman).

Senate.

Senator Walter Jackson Cooper.
 Senator Charles Adeock Lamp.

House of Representatives.

Albert Oliver Badman, Esq., M.P.
 Rowland James, Esq., M.P.
 William Alfred Jolly, Esq., M.P.
 George Martens, Esq., M.P.
 Daniel Mulenhy, Esq., M.P.
 Thomas Sheehan, Esq., M.P.

EXTRACT FROM THE VOTES AND PROCEEDINGS OF THE HOUSE OF REPRESENTATIVES, No. 118,

DATED 16TH FEBRUARY, 1943.

3. PUBLIC WORKS COMMITTEE—REFERENCE OF WORKS—NEWNES AND BAERAMI SHALE OIL PROPOSALS.—Mr. Beasley (Minister for Supply and Shipping) moved, by leave, That, in accordance with the provisions of the *Commonwealth Public Works Committee Act 1913-1936*, the following proposed works be referred to the Parliamentary Standing Committee on Public Works, for investigation and report:—Newnes and Baerami Shale Oil Proposals.

Mr. Beasley, having laid on the Table Reports and Estimates furnished by the American Board of Economic Warfare Mission in connexion with the proposed works—

Debate ensued.

Question put and passed.

LIST OF WITNESSES.

Barr-Smith, V. H.	.. Secretary, National Oil Pty. Ltd.
Bellemore, C. J.	.. Deputy Director of New South Wales for the Man-power Directorate.
Bowdler, J. D.	.. Mine Manager, National Oil Pty. Ltd., Glen Davis.
Bell, H. S.	.. Member of the American Board of Economic Warfare Mission.
Baddeley, J. M.	.. Chief Secretary and Minister for Mines, New South Wales.
Butler, A. K.	.. Assistant Manager, Newcastle Steel Works, Broken Hill Pty. Co. Ltd.
Carey, W. H.	.. Employee, National Oil Pty. Ltd., Glen Davis.
Davies, D. J.	.. Industrial and Welfare Officer, National Oil Pty. Ltd., Glen Davis.
Davis, Sir George	.. Shareholder, National Oil Pty. Ltd.
Dye, A. W.	.. Metallurgist and Industrial Technologist.
Fell, D. A.	.. Manager, Shell Co. (New South Wales), and Chairman, New South Wales Advisory Consultative Committee of the Petroleum Industry.
Grant, G. W. S.	.. General Secretary, Miners Federation.
Griffiths, L. J.	.. Managing Director, National Oil Pty. Ltd.
Hebble, H. F. J.	.. Member of the American Board of Economic Warfare Mission.
Hyham, R. T.	.. Secretary, Glen Davis Shale Miners Lodge.
Jacomini, V. V.	.. Chief of the American Board of Economic Warfare Mission.
Johnstone, J.	.. General Superintendent, J. & A. Brown, Seaham and Abermain Collieries.
Jones, S. W.	.. Principal Engineer, Water Supply and Sewerage, Public Works Department, New South Wales.
McCartney, A. E.	.. Manager, Peters American Delicacy Co.
Knight, H.	.. Minister for Labour and Industry, New South Wales.
Kenny, E. J.	.. Senior Geological Surveyor, Department of Mines, New South Wales.
Lloyd, M. T.	.. Managing Director, Pool Petroleum Pty. Ltd.
Lyon, A. G.	.. Chemical Engineer.
McAndrew, N.	.. Employee, National Oil Pty. Ltd., Glen Davis.
Moser, E. L.	.. New South Wales Manager, Pool Petroleum Pty. Ltd.
Petrie, J. R.	.. Employee, Retort Section, Glen Davis Works.
Orr, W.	.. Member of the Commonwealth Coal Commission.
Rogers, L. J.	.. Commonwealth Fuel Adviser.
Roy, S. A.	.. President, Glen Davis Miners Lodge, and Vice-President, Western District Miners Federation.
Smith, A. C.	.. Administrative Officer, Department of Supply and Shipping, Melbourne.
Spence, J.	.. Consulting Accountant, Sydney.
Watson, R. W.	.. Accountant, National Oil Pty. Ltd.

NEWNES AND BAERAMI SHALE OIL PROPOSALS.

REPORT.

The PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, to which the House of Representatives referred, for investigation and report, the Newnes and Baerami Shale Oil Proposals, has the honour to report as follows:—

INTRODUCTORY.

1. The question of obtaining oil from the shale deposits of Australia has received the attention of governments and mining companies for many years, and has been the subject of several reports by various committees directed to carry out investigations in regard to its possibilities. The most widely known of our deposits of shale and the most extensive yet discovered in New South Wales is that known as the Newnes-Capertee deposit.

Steps to develop this deposit were undertaken at Newnes in 1905 by the Commonwealth Oil Corporation, a London company. This company went into liquidation about 1912, having lost, according to reports, about £1,800,000. In 1914 the project was taken over by Sir John Fell, who carried it on until 1923.

2. During 1930-31, the Scullin Government allocated £100,000 for the repatriation of surplus coal-miners, and attention was drawn, as a possible avenue for the absorption of miners, to Newnes. Actually, the area was on the other side of the mountain at a place now known as Glen Davis. That Government appointed the Shale Oil Development Committee Ltd. to carry out work of an experimental and developmental character, but the Committee ceased to function early in 1933, after having produced several hundreds of thousands of gallons of oil.

3. In February, 1933, the Governments of the Commonwealth and New South Wales, appointed the Newnes Investigation Committee to undertake further investigation. In April, 1934, that Committee submitted a report in which it stated—

Actual reserves of shale of workable thickness proved in the Capertee area amount to 2,000,000 tons, with a probable reserve of a further 3,000,000 to 4,000,000 tons. The possible total quantity of shale in the Newnes-Capertee area in all thicknesses down to 6 inches, is 20,000,000 tons. Average oil content of the proved shale is 100 gallons to the ton.

The Committee reported that 6,000,000 gallons of motor spirit and 10,000 tons of fuel oil could be obtained each year for a capital expenditure of £600,000.

4. Towards the end of 1936, after public applications had been invited, but without success, from companies willing to develop the project, Mr. G. F. Davis, now Sir George Davis, of Davis Gelatine Ltd., was asked by the then Commonwealth Government to undertake the development of the field. He agreed, and the company known as the National Oil Pty. Ltd., was formed for the purpose. The arrangement was covered by the National Oil Pty. Ltd. Agreement Act, which was ratified by Parliament in September, 1937. Under that agreement the capital was to be provided as follows:—

	£
Commonwealth Government	334,000
New South Wales Government	100,000
National Oil Pty. Ltd.	166,000
	<u>600,000</u>

The Government moneys were to be in the form of a loan, bearing interest at the rate of 4½ per cent. per annum, and provision was made for the repayment of such loans over a period of twenty years, which was estimated as the minimum life of the deposit on the basis of 10,000,000 gallons of petrol per annum.

5. In April, 1940, and again in January, 1941, the company asked for additional funds, with the result that a total capital of £1,300,000 was provided for the venture. Of that amount £809,000 was provided by the Commonwealth Government, £335,000 by the company, and £160,000 by the Government of New South Wales. Of the Commonwealth Government's contribution, £250,000 was in the form of a bank guarantee with the Commonwealth Bank.

6. Towards the end of 1941, the Commonwealth Government decided that it must take more direct control of the enterprise, and therefore it appointed two more Government directors to the Board of the company, which now consists of three Commonwealth nominees and one State Government nominee.

7. Further funds were provided, making the total capital up to date approximately £1,800,000, of which £1,300,000 has been provided by the Commonwealth Government. Estimates submitted by the company, and the Government directors on the Board, indicate that a further amount of £1,137,634 will be needed to bring the venture to the stage at which an output of approximately 17,000,000 gallons of crude oil, and 9,350,000 gallons of petrol per annum can be expected.

PROPOSAL NOW BEFORE THE COMMITTEE.

8. By arrangement with the Government of the United States of America, and at the request of the Commonwealth Government, a Mission of American experts arrived in Australia towards the end of 1942, to inquire into the development of liquid fuel from deposits of shale in this country.

9. Briefly, the American proposal is to accelerate the present scheme of production at Glen Davis to 17,000,000 gallons of crude oil per annum, and by the addition of plant to bring the total production to 39,200,000 gallons of crude oil per annum, from which will be produced approximately 23,400,000 gallons of petrol per annum, together with diesel oil, gas oil, wax, fuel oil and coke.

10. In addition, it was recommended that the shale deposit at Baerami should be developed to produce 37,300,000 gallons of crude oil per annum, from which would be extracted 22,303,920 gallons of petrol, together with other products.

ESTIMATED COST.

GLEN DAVIS.

11. The estimated cost of the additional plant and capital required, as set out by the American Mission, is—

Additions to mining plant	£ 150,000
Additions to crushing and conveying plant	75,000
Additions to retorting plant	300,000
Added refining plant—	
Topping unit
Catalytic cracking unit
Coking unit
Wax plant
Storage
Housing
	£ 637,000
	50,000
	<u>1,118,000</u>

Of this amount, it was explained in evidence that it was expected that the United States Government would make available under Lend-Lease Agreement, machinery to the value of £500,000, so that the actual amount required to be made available by the Commonwealth would be £618,000.

BAERAMI.

12. For the opening up of the Baerami deposit, it was estimated that the requirement would be—

Mine equipment, crushers, trucks, road, shop, &c.	£ 620,000
Retorts, spent shale disposal, &c.	600,000
Power house for mine and retorts	100,000
Water supply	100,000
Pipe line	87,000
Refinery	650,000
	2,176,000
10 per cent. war contingencies	218,000
	2,394,000
Mine development	220,000
Self liquidating capital for village	300,000
Total capital required	<u>2,914,000</u>

Of this amount, it was expected that the United States Government would make available under Lend-Lease Agreement, the sum of £600,000, so that the total amount to be made available by the Commonwealth would be £2,314,000.

ESTIMATED REVENUE.

GLEN DAVIS.

13. While the project, as proposed, is said to be capable of attaining a 62 per cent. yield of petrol (24,320,000 gallons) per annum, from the crude oil, it is realized that the disposal of the fuel oil in excess of the plant requirements, may be a problem, excepting when it is required by the Naval and Military Forces. For purposes of analysis, an example of diversification of saleable products was offered as an average of what may be expected. This was given by the Mission as—

VALUE OF PRODUCTS—1942 PRICES.

	%		s. d.	£
Petrol	67.1	22,400,000 gals.	@ 1 4.7	1,658,687
L.C.T. Diesel	7.5	2,940,000 gals.	@ 6.5	79,265
Gas Oil	7.1	2,780,000 gals.	@ 4	46,333
Wax	3.6	12,000,000 lb.	@ 5	250,000
Fuel Oil	13.7	5,370,000 gals.	@ 3	67,125
Coke	1.5	2,600 tons	@ 34 0	4,420
Annual Value of Products				<u>2,008,810</u>

Less Operating Costs—

	£	£
Mining	348,000	
Crushing	22,400	
Retorting	200,800	
Refining	250,000	
		<u>819,200</u>

Net Annual Realization before charges for interest, taxes and amortization 1,186,610

Baerami.

14. The refining plant is designed for operations varying from that of maximum production of petrol to maximum production of fuel oil, either of which operations may be demanded by the Naval or Military Forces. For the purpose of analysis, an example of diversification of saleable products was offered as an average of what may be expected. This was given by the Mission as—

VALUE OF PRODUCTS AT 1942 PRICES.

	%	Gallons	s. d.	£
Petrol	59.7	22,305,920	@ 1 4.7	1,651,981
Light Diesel Oil	1.2	448,320	@ 7	13,976
Gas Oil	19.3	7,210,480	@ 4.5	135,186
Fuel Oil	9.5	3,540,200	@ 3	44,335
Annual Value of Products				<u>1,744,818</u>

Less Operating Costs—

	£	£
Mining	672,760	
Crushing	22,425	
Retorting	72,900	
Pipe Line	8,400	
Refining	180,000	
		<u>955,575</u>

Net Annual Realization before charges for interest, taxes, amortization and Crown Royalties 789,043

COMMITTEE'S INVESTIGATIONS.

15. The Committee, having studied the report of the United States Mission, questioned the three members of the Mission on various aspects of the proposal. A visit was paid to Glen Davis, where an inspection was made of the mine and plant, and the amenities associated with the settlement. Subsequently evidence was taken from 25 witnesses, including representatives of the Commonwealth, the State of New South Wales, the National Oil Proprietary Limited, the Miners' Federation, Pool Petroleum Proprietary Limited, and others, and an endeavour was made to obtain a true picture of the actions taken in the past to develop the deposits and the potentialities for the future.

16. At the outset, the Committee desires to mention that although this reference is for an investigation of the Newnes and Baerami shale oil proposals, it should be explained that, notwithstanding the production of oil from shale was commenced at Newnes in 1805, all plant, &c., was subsequently transferred to Glen Davis, and since 1940 the operations have been carried out in that locality. Hence, throughout this report the term "Newnes" has been dropped in favour of the use of the term "Glen Davis".

17. All witnesses examined agreed that for the present, efforts should be concentrated on increasing production at Glen Davis, as it was unlikely that men and material could be obtained for the development of the project at Baerami, which, in addition to mining machinery, refining plant, power house, &c., involves also the construction of a village, road, pipe-line, water supply, &c., for an entirely new venture. Consequently, beyond preliminary inquiries, the Committee has confined its attention to Glen Davis, and this report refers wholly and solely to that project. As regards Baerami, consideration of its development will form the subject of a future report.

EXTENT OF DEPOSIT.

18. It was ascertained from the Senior Geological Surveyor of the Department of Mines, New South Wales, who made a survey of the area, that the Capertee-Wolgan field which includes Glen Davis and Newnes, covers about 20 square miles, and although shale is not developed over the whole of that area, he states that, on a conservative estimate, the known

deposit would allow of the treatment of 575,000 tons of shale per annum over a period of fifteen years. In addition, experts report that there is a considerable quantity of shale in the immediate vicinity which could be treated at the Glen Davis plant.

QUALITY OF SHALE.

19. The rich seams at Glen Davis have an oil content of over 100 gallons to the ton, while some of the other seams are of lower value. From "run of the mine" treatment the American Mission plans to extract an average of 68.2 gallons of crude oil per ton. It was ascertained in evidence that the material treated at Glen Davis during 1941 had an oil content of 95 gallons to the ton, and the recovery was 53.3 gallons per ton.

RETORTS.

20. It is stated that all the processes associated with the production of petrol at Glen Davis are in operation successfully, excepting the vital one of carbonizing the shale. It is claimed that this is due to the unsatisfactory type of retort in use, and the lack of an adequate water supply.

The question of retorts is a vexed one, and has been the subject of much inquiry. The efficiency of a retort is dependent on the quality of the shale treated, and the amount of material dealt with per day. Many retorts which in the laboratory stage give excellent results, have proved disappointing when operated under commercial conditions. There is little overseas experience to serve as a guide, as the extraction of oil from shale has not been widely practised.

21. The first type of retort established at the old Newnes works was what is known as the Pumphreston retort, which for many years had been operated in Scotland. The Scottish shale, however, is of low oil content, and this type of retort was soon proved unsatisfactory for the treatment of the higher grade Newnes shale. Improvements were made by constructing four off-takes of gases and better results were obtained. This became known as the Fell retort. Subsequently, this retort was modified, and reverted to the single off-take, and the results obtained were not so satisfactory.

22. Investigations made abroad showed that better results might be expected from a type of retort operated in Estonia, and known as the Kivioli retort. Plans of this retort were purchased by Sir George Davis, when he took over the development of the Glen Davis deposit, but the cost of installation was considered too high, and the project was dropped. Subsequently, four of the existing retorts were reconstructed to conform to the type of the original Fell retort, and are giving more satisfactory results; it is intended gradually to reconstruct the remaining 60 retorts in operation to that type. An additional 44 of this type of retort is being erected, and when this work is completed a total of 104 retorts of the Fell type, with four off-takes, will be in operation.

23. During the course of the Committee's investigations, a number of other retorts were brought under its notice. Some were in limited operation, while others were only in the experimental or blue-print stage. The possibilities of these types were investigated, but the Committee was satisfied that no better type had been evolved locally, which could be expected to give better results than the improved Fell.

24. The retort recommended by the American Mission for the production of the increased quantity of oil projected at Glen Davis is one developed by Mr. Jacomini, and known as the Reneo retort. This is said to be capable of operating in units capable of treating as much as 350 tons of shale per day, and will each cost approximately £100,000. It has never,

to the Committee's knowledge, been operated on a commercial scale, but a small model, capable of treating 75 tons per day, has been run for short periods under tests. The result of the test made in Australia showed that the optimum rate of throughput for this particular retort was 50 tons per day, when the efficiency of recovery was 95 per cent. of the shales tested. At the rate of 70 tons throughput per day, the efficiency dropped to 79 per cent. The report of experts on this retort was to the effect that they had "every confidence that the retort designed by him (Mr. Jacomini) on the sound basic principle developed by him will give satisfactory and efficient service". Nevertheless, the Committee is loath to recommend the construction, at a cost of approximately £300,000, of retorts which have not been operated on a commercial scale. However, the retorting is the weakness in the present operation at Glen Davis, and if there can be discovered a retort which will give satisfactory service while extracting a greater percentage of the oil content of the shale, the output, as well as the financial aspect of the venture will be greatly improved.

25. After discussion with the Commonwealth representative on the Board of Directors of the National Oil Pty. Ltd., and others, the Committee is impressed with the potentialities of the Reneo retort, and considers it should be tried out under working conditions. If a pilot plant were put in at Glen Davis and operated for three months or six months, the company would know much more about it, and either substantiate the claims made for it, or as a result of its work, prove that certain alterations or modifications are necessary. It was ascertained that a unit of the Reneo retort which could be installed as an integral part of the existing plant could be established at Glen Davis for a sum of approximately £30,000. This was strongly advocated by one of the directors who is also assistant manager of the steel works of the Broken Hill Pty. Co. at Newcastle, who intimated that there had been discussions with Mr. Jacomini in regard to some technical aspects of the operations of the Reneo retort, which emphasized the desirability, virtually the necessity, of proving whether Mr. Jacomini was right or wrong.

26. The Committee therefore recommends that steps be taken to have a pilot unit of the Reneo retort established at Glen Davis at an estimated cost of £30,000 as early as practicable.

27. Certain essential parts of the Reneo retort are not manufactured in Australia, and delay will occur in securing them from the United States. The Committee was informed, however, that a boiler, valves, and some other parts of the test retort erected here for experimental purposes have been acquired by various firms in Australia. Unless these firms are using such equipment for essential war work, the Committee recommends that consideration be given to the question of impressing such material for the purpose of constructing the pilot plant at Glen Davis, and so save the time that would be lost in awaiting importation.

WATER SUPPLY.

28. The present water supply for Glen Davis is obtained from Running Stream Creek, together with such water as may be available from subterranean sources. During the drought Running Stream Creek dried up for some time, and the quantity of water available from bores was reduced to about 6,000 gallons per hour, or about 120,000 gallons a day. A repetition of such conditions would be serious, as lack of an adequate water supply would jeopardize the whole scheme.

29. To reach the proposed output of 17,000,000 gallons of crude oil, giving 9,350,000 gallons of petrol per annum, about 1,000,000 gallons of water per day will be required; while to develop the scheme outlined by

the American Mission, to 39,200,000 gallons of crude oil, giving 22,400,000 gallons of petrol per annum, about 1,250,000 gallons of water per day will be required. Several schemes for obtaining the necessary supply have been investigated. It was suggested that by constructing a dam 120 feet in height, at a cost of approximately £172,000, a reasonable supply could be obtained from Running Stream Creek, which would be sufficient for the works and the township of Glen Davis. The fact that this creek has been dry, and may become so again makes the scheme somewhat precarious.

30. A more promising supply is that known as the Fish River scheme. For some years, the New South Wales Government has had in contemplation the construction of a dam on the Fish River near Oberon, from which water could be gravitated through a pipeline to Wallerawang, thence to Lithgow, and through Portland to Glen Davis. To give Glen Davis a daily supply of 1,250,000 gallons, it was estimated at the date of submission of this project, that the complete scheme would cost £533,800, and that this sum would be split up into the following quotas:—

New South Wales Government will be responsible for	£ 162,000
Blaxland Shire will be responsible for	.. 55,000
Lithgow Municipality will be responsible for	.. 162,000
Glen Davis Co. will be responsible for	.. 204,300
Oberon Shire will be responsible for	.. 5,150
Glen Davis Town will be responsible for	.. 5,350
	533,800

31. During the course of the Committee's investigations, a communication was received through the Department of Supply and Shipping from the Secretary, Loan Council, intimating that as a result of consultations with the State Government, a revised estimate of the cost of this proposal had been received.

32. It is understood that the State Government would have preferred to carry out this work with its own personnel, but as this would involve very great difficulty in diverting men from other projects it had been decided, after discussion with the Man Power Authorities, as inevitable that the work should be carried out by the Allied Works Council, and this will add to the cost of the scheme.

33. It is stated that the cost of the scheme, which until recently was set down at £533,800, is now estimated to be as follows:—

- (a) If carried out on a 54-hour week basis—
£318,412 (increase, £284,612).
- (b) If carried out on a 44-hour week basis—
£270,514 (increase, £245,714).

The estimated increases of £284,612, and £245,714 are made up as follows:—

	£
1. Fares, travelling time, sick, holiday and wet weather pay	.. 53,034
2. Camp establishment and operation costs (less provision made in original estimate)	.. 87,930
3. Added cost due to inefficiency of labour—	
(a) 44-hour week	.. 103,730
(b) 54-hour week	.. 142,628
(NOTE.—For the purpose of this calculation inefficiency has been adopted at 33 per cent.)	
4. Additional hire rates and freight on plant	.. 1,000

34. The Committee is satisfied that a water supply scheme is essential, and must be gone on with even at the increased cost. It is also considered that to get the work done as expeditiously as possible, a 54-hour week should be worked.

35. The Committee, however, deprecates the fact that the New South Wales Government has not increased its contribution to the water supply scheme in the same proportion as the Commonwealth. This is also apparent in respect of its contribution of funds for the main development of Glen Davis, and the Committee urges that an effort should be made to induce the State Government to bear a greater proportion of the expenditure involved in this proposal.

HOUSING.

36. The Committee was unfavorably impressed with the arrangements made for housing the employees at Glen Davis. Approximately 300 single and unattached men live in a camp consisting of cubicles with iron roofs and hessian walls. The employees are not charged rent for these cubicles. Under a co-operative system, 89 houses have been erected, and are of a reasonable standard. The Commonwealth Government has provided an amount of £50,000, which will be devoted to the erection of approximately 70 more houses. In addition, it is proposed to erect a hostel to accommodate 300 single and/or unattached men. At the present time it was stated funds are available, but that delay is occurring in the provision of housing accommodation because of the refusal of the Department of War Organization of Industry to grant the necessary priority for the supply of man-power and material.

37. A considerable degree of absenteeism occurs at Glen Davis, accentuated, the management asserts, because of the primitive housing conditions. This militates against efforts being made to increase production; under existing circumstances, an immense amount of money is being lost, and will be lost until vastly increased quantities of oil are produced.

The Committee therefore recommends that all necessary action be taken to permit of the housing programme for Glen Davis being accelerated as much as possible.

MECHANIZATION.

38. It was explained in evidence that to reach the rate of production envisaged by the American Mission, three-shift operation and complete mechanization of the mining operations are requisite, so that the necessary tonnage of oil shale can be produced. Such mechanization, amongst other things, contemplates extraction of pillar mechanically, which operation is dependent upon permission being granted by the Minister for Mines in New South Wales. The Committee ascertained from the Minister that this permission had been given; and also ascertained from the representative of the Miners Federation that no objection would be raised by the miners to adopting these two essentials.

PRESENT VOLUME OF PRODUCTION.

39. The production of oil at Glen Davis commenced about the middle of 1940. In 1941 the amount of crude oil produced totalled 4,273,315 gallons; for the first six months of 1942, production was 1,622,518 gallons, and for the second half of the year, production was 2,099,253 gallons, a total of 3,721,771.

Petrol manufactured in 1941 totalled 1,999,018 gallons, and in the following year, 1,559,823 gallons.

COST OF PRODUCTION.

40. It was stated in evidence that the cost of producing petrol at Glen Davis during 1941, including interest and depreciation, was 3s. 3.05d. a gallon.

SALE PRICE.

41. After duly considering the question of distributing its own petrol, and deciding that the cost of doing so would be too heavy, the company entered into

an agreement with the major oil companies under which *Pool Petroleum Pty. Ltd.* agreed to take the total production from Glen Davis, at a price calculated on the weighted average, landed cost of importations in all Australian capital cities. The price is arrived at monthly, and has varied from 1s. 9d. to 1s. 11.663d. a gallon.

The Committee is of opinion that the company should be able to secure a better price for its product, and recommends that on the expiry of the existing agreement, about September, 1946, the matter of disposing of Glen Davis petrol should be reviewed.

MARKETING.

42. The method at present adopted, of selling in bulk to the major oil companies for re-sale in blend with imported petrol, has certain advantages, in that it immediately absorbs the entire output of the plant, avoids storage, &c.; but the identity of the Glen Davis petrol is lost. Two other methods suggest themselves—

- (a) selling direct to re-sellers for a retail sale as Glen Davis petrol, and
- (b) selling in bulk to one or more established distributing companies for re-sale as Glen Davis petrol.

The advantage of (a) would be the possibility of increased profits when the product had been firmly established in the market. The Australian control of production and distribution would make for goodwill, while the identity of the petrol would be maintained. On the other hand, the company would be faced with the risk that absorption of full production might not be rapidly reached; heavy expenditure would be necessary for storage, establishment of a distributing organization, erection of bulk depots, installation of numerous petrol pumps, &c. In addition, the competition of existing distributing companies might be expected to be intense and unrelenting.

43. To sell in bulk to established distributors for re-sale as Glen Davis petrol, would appear from several points of view to be the most favorable method to be adopted. The identity of Glen Davis petrol would be retained, as well as the goodwill attaching to its Australian origin. It would not add to the number of distributing organizations, and would possibly involve no additional marketing facilities. It is considered that the Commonwealth Oil Refineries Ltd. would be the most appropriate organization to undertake this work, and the Committee recommends that preliminary overtures might be opened with that company to secure its participation in the distribution of Glen Davis products.

COMMONWEALTH'S RETURN FROM INVESTMENT.

44. The question was raised in Committee as to whether, under existing circumstances, the financial interests of the Commonwealth in this company are being sufficiently safeguarded. Under the agreement ratified by the *National Oil Pty. Ltd. Agreement Act, No. 23 of 1937*, the Commonwealth was to loan to the company £334,000 as against £166,000 loaned by the State of New South Wales, and £166,000 provided by the *National Oil Pty. Ltd.* The Commonwealth and State loans were to be repaid over a period of twenty years, with interest at the rate of 4½ per annum. Since then, the Commonwealth has provided additional funds, bringing its contribution to £1,500,000, and the company has brought its share up to £325,000, the State's loan remaining at its original figure. To bring production up to approximately 10,000,000 gallons of petrol per annum, the Commonwealth has agreed to provide an additional sum of £1,137,634, bringing its commitments to £2,437,634.

If the venture fails, the Commonwealth will lose its money; if, in the future, it becomes successful, the Commonwealth will get back only its own money, with a relatively low rate of interest, while the company will reap the return from a successful undertaking, promoted with the help of Commonwealth capital.

45. With the provision of the large amount of capital over and above that mentioned in the original agreement, the Committee considers that some fresh arrangement should be entered into, which will give the Commonwealth a proportionate share of any return received from the successful enterprise.

ANTICIPATION AND ACHIEVEMENT.

46. The Newnes Investigation Committee, in 1934, after an inquiry extending over some months, submitted a report, picturing a prosperous future for Glen Davis, which, unfortunately, has never eventuated. The anticipation of that Committee was that a company with an initial capital of £600,000 would be able to produce annually 6,000,000 gallons of motor spirit and 18,000 tons of fuel oil; sell these products at 11½d. a gallon, and £2 13s. 6d. a ton, respectively, and pay to shareholders a dividend of 6 per cent. per annum. After nearly three years' operation, the position now is that the capital of the company is £1,800,000, petrol is being sold at 1s. 9d. to 1s. 11d. a gallon, and the company, during 1942, made a loss of approximately £260,000.

HOW THIS PROJECT IS VIEWED.

47. During the course of its inquiries, it was increasingly borne in on the Committee that this project could not be considered from the ordinary commercial standpoint, but must be regarded from a national point of view. The Committee has formed a definite conclusion that petrol of a satisfactory quality can be produced from Glen Davis shale, but the cost, having regard to the loss of Customs revenue, would be at least twice that of imported petrol. On economic grounds, the establishment of an industry is not warranted, and it could be justified only on the importance for national considerations of developing an Australian oil industry. The extent to which Australia can afford to exploit its own oil resources at this cost must depend upon national policy, and would appear to be outside the scope of this Committee's inquiry.

48. Although the American Mission has painted a rosy picture showing that when Glen Davis attains the production of 9,350,000 gallons of petrol per annum it will, on 1943 prices, have a net annual realization of £241,990, before charges for interest, taxes and amortization are deducted, the fact must not be lost sight of that a representative of the company stated he considered it would be five years before production reached 9,350,000 gallons. Moreover, petrol prices are unlikely to remain at their present high rate after the war, and "interest, taxes and amortization" are more than likely to be in excess of the £241,990 mentioned.

49. Further, the proposal to increase production to 22,400,000 gallons of petrol per annum, visualizes the retooling of 1,260 tons of shale, 24 hours a day, for 365 days in the year. As, under the best circumstances, with A.1 priorities in all departments, it is unlikely that the machinery can be available within six months, and it is expected that production will be reached eighteen months after that, it will be seen that the possibility of full production under both the present and the proposed plan can be of little assistance to the war effort unless the war is to drag on for more years than we like to contemplate.

50. Nevertheless, taking the long view, it will be an advantage if, at some time in the future, this company will be in a position to produce approximately 5 per

cent. of Australia's petrol needs. Moreover, employment will be given to a substantial body of men, and the experience gained in this proposition may lead to the exploitation of other shale seams which are known to exist in other parts of the Commonwealth, and the possible extraction of oil from coal, when the demand for coal, as coal, diminishes, as some people are inclined to think.

51. With this object in view, it is suggested that Parliament authorize this Committee, at some suitable time, to extend its inquiries as to the possibility of developing other shale deposits in Australia, and at the same time investigate the possibility of extracting oil from coal.

CONCLUSION.

52. After due consideration of all the circumstances, the Committee recommends that provided machinery to the value of £500,000 is supplied under Lend-Lease Agreement arrangements be made to obtain the equipment necessary for the development of Glen Davis for the production of 30,200,000 gallons of crude oil per annum, to produce 22,400,000 gallons of petrol per annum, but that the order for Renco retorts be not decided upon, pending receipt of reports that the pilot plant to be installed at Glen Davis has proved that the Renco retorts will be satisfactory.

PROGRESS REPORTS.

53. In order that the Commonwealth Government may be kept fully informed of the development at Glen Davis, the Committee recommends that the Minister in charge be furnished with a progress report at least quarterly, setting out the work done in the installation or alteration of plant, &c., and also particulars of the production of petrol, oil, &c., and the prices received for them.

TOTAL CAPITAL COST.

54. The following summary shows the total capital cost at Glen Davis when these proposals shall have been carried into effect:—

	£
As stated in paragraph 7 of this report, the capital advanced by the Commonwealth up to date is	1,300,000
To enable the output of petrol to reach the figure of 9,350,000 gallons of petrol per annum, the Commonwealth has already approved of the expenditure of an additional	1,137,634
Since then it has been estimated that the Fish River Water Supply scheme will require an additional Commonwealth contribution of	239,537
To increase petrol production to 22,400,000 gallons per annum, as proposed by the American Mission, it is estimated to require	1,118,000
(of which sum it has been stated the United States Government will provide machinery under the Lend-Lease Agreement to the value of £500,000).	—————
The total capital advanced by the Commonwealth at Glen Davis will then amount to	3,795,171
	£
In addition, the New South Wales Government has advanced	166,000
And the National Oil Pty. Ltd. has invested	491,000
Making the total capital in the venture	4,286,171

55. It will be noted from the above statement that under the Committee's recommendations it is expected that the production of petrol at Glen Davis will be increased from 9,350,000 gallons per annum to 22,400,000 gallons per annum, at an additional cost to the Commonwealth of £618,000.

SUMMARY OF RECOMMENDATIONS.

56. Briefly summarized, the recommendations of the Committee are—

- (a) That attention be concentrated on increasing the output at Glen Davis, and no action be taken to develop Baerami for the present. (Para. 17.)
- (b) That a pilot retort of the Renco type be erected at Glen Davis for trial under working conditions. (Para. 26.)
- (c) That such parts of the equipment for the Renco retort as are available in Australia be impressed, unless utilized in essential war work. (Para. 27.)
- (d) That approval be given to the expenditure of £492,034, as the Commonwealth's quota towards the completion of the Fish River Water Supply Scheme. (Para. 34.)
- (e) That an endeavour be made to induce the New South Wales Government to bear a greater proportion of the expenditure involved in this proposal. (Para. 35.)
- (f) That necessary action be taken to accelerate the development of the housing scheme at Glen Davis. (Para. 37.)
- (g) That on the termination of the agreement about September, 1946, for the disposal of the Glen Davis petrol in bulk, to Foot Petroleum Proprietary Limited, the matter of marketing Glen Davis petrol be reviewed. (Para. 41.)
- (h) That preliminary overtures be opened with Commonwealth Oil Refineries Ltd. to secure their participation in the distribution of Glen Davis products. (Para. 42.)
- (i) That fresh arrangements be entered into with the National Oil Pty. Ltd. to give the Commonwealth a proportionate share of profits, if and when the venture shall have become a successful commercial proposition. (Para. 43.)
- (j) That Parliament authorize this Committee to extend its inquiry as to the possibility of developing other shale deposits in Australia, and, at the same time, investigate the possibility of extracting oil from coal. (Para. 51.)
- (k) That provided machinery to the value of £500,000 is supplied under the Lend-Lease Agreement all arrangements be made to obtain the equipment necessary for the development of Glen Davis for the production of 30,200,000 gallons of crude oil per annum to produce 22,400,000 gallons of petrol per annum, but that the order for Renco retorts be not decided upon pending the receipt of reports that the pilot plant to be installed at Glen Davis has proved that the Renco retort is suitable. (Para. 52.)
- (l) That the Minister in charge be furnished with a progress report at least quarterly, setting out work done, particulars of production, and prices received for products. (Para. 53.)

C. H. Brand
C. H. BRAND,
Chairman.

Parliament House,
Canberra,
10th June, 1943.