



137

Report of

Royal Commission on Coal

THE HONOURABLE I. C. RAND, Q.C.
The Commissioner

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ROYAL COMMISSION ON COAL (1959)

October 5, 1960.

It is requested that the following corrections be made in your copy(s) of the Report of the Royal Commission on Coal:

ERRATA

Back of title page:

change Cat. No. 21-M1959/2 to Cat. No. Z1-1959/2

Page xv the third last paragraph was omitted in error during production of the report. Detach, moisten and glue the following slip in the blank space at the bottom of page xv—

Of the Dominion Coal Board, its Chairman, Mr. W. E. Uren, its Members and Staff, the Commission enjoyed the fullest co-operation. Mr. C. L. O'Brian, Mr. D. A. Edgar and Mr. A. W. Lovett met every request for information with thoroughness and despatch and their intimate knowledge of the Canadian industry was of the utmost value.

Page 22, 6th line from bottom:

change Access from #28 Colliery to Access from #20 Colliery

Page 24, 16th line from bottom:

change 69,365,000 to 96,810,000

Page 49, 2nd last paragraph: Replace with attached text. Detach, moisten and glue the following slip over the 2nd last paragraph—

Coal shipped by water from Sydney is carried over the Sydney and Louisburg Railway, a distance of 14.4 miles from Glace Bay to Sydney, at a rate of \$1.03 per net ton. Although switching takes place at both terminals, that charge appears to be much beyond what it should be and the Board of Transport Commisisoners should be requested to fix a rate for the future.

W. KEITH BUCK,
Secretary.

REPORT OF
ROYAL COMMISSION ON COAL



CANADA

Report of ROYAL COMMISSION ON COAL

The Honourable I. C. Rand, Q.C.
The Commissioner

August, 1960.

ROGER DUHAMEL, F.R.S.C.
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August 31, 1960.

To His Excellency
The Governor General in Council,

May It Please Your Excellency,

I, The Commissioner, appointed as a Royal Commission in accordance with the terms of Order in Council P.C. 1959-1293 dated 6th October, 1959, to enquire into and make recommendations upon certain matters pertaining to the Canadian coal industry:

Beg to Submit to Your Excellency

The Following Report.

A handwritten signature in cursive script, appearing to read "H. Land", written in dark ink.

The Commissioner.

A handwritten signature in cursive script, reading "W. Keith Bush", written in dark ink.

Secretary.

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FOREWORD

THE Commission commenced its task early in December, 1959 by making arrangements for the receipt of briefs at public hearings held during February, March and April, 1960 in all the coal-producing provinces of Canada and in the two major coal-consuming provinces. During the course of the hearings, special arrangements were made, with the advice and assistance of the appropriate provincial departments of mines, to visit the coal mining communities and to observe the social and economic aspects of the problems facing the industry. During three months of travelling, we visited nearly every coal mining community in both Eastern and Western Canada and, in almost every instance, held informal discussions with the elected civic officials and leading citizens. We visited also a majority of the coal mines in order to become acquainted with the techniques of both underground and strip coal mining as well as with the more obvious problems of the industry. All in all, we visited 31 coal mining communities, inspected 6 strip mines and 31 mine surface plants, and we went into underground workings on five separate occasions. Coal docks in two major ports, Toronto and Montreal, were inspected. The Commission extends its appreciation to those officials of provincial government Mines Departments, local community authorities and coal companies whose assistance made the visits and inspections possible, pleasant and instructive.

During the 12 days of public hearings, the Commission received 58 submissions. The dates and places of hearings are given in Appendix C; the list of submissions received and filed as exhibits is contained in Appendix F, which also records certain other submissions and documents received by the Commission. Appendix D contains a list of the mine communities visited with the dates of the visits; similarly, Appendix E contains a list of the mines, thermal power plants and other facilities visited and the dates when made. The various special studies undertaken at the request of the Commission are recorded in Appendix G.

To assist the Commission in evaluating the future market for coal in the production of thermal power, a questionnaire was sent to all thermal electric power stations in Canada. The response was gratifying in that every questionnaire was returned with the requisite relevant information.

I am grateful to many officers of the Public Service of Canada for advice upon numerous occasions and for the preparation of informative reports and studies on a number of pertinent topics. These studies in large measure provided the background information which enabled me to complete the task

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in the time available. Specifically, I wish to express appreciation to the Department of Mines and Technical Surveys for six studies prepared under the general direction of Mr. A. Ignatieff, Chief of Division, by Dr. D. S. Montgomery, Mr. A. Brown, Mr. E. R. Mitchell, Mr. T. E. Tibbetts, and Mr. C. E. Baltzer, all of the Fuels and Mining Practice Division, Mines Branch; for two studies prepared by Mr. B. A. Latour of the Geological Survey of Canada; for three studies prepared by Mr. C. W. Raymond of the Geographical Branch; for four studies prepared by Mr. R. B. Toombs, Mr. R. J. Jones and Mr. R. B. Elver of the Mineral Resources Division; for draughting services provided by both the Cartography Unit of the Geographical Branch and the Map Compilation and Reproduction Division of the Surveys and Mapping Branch; and for the translation of the report into French, by Mr. Henri Gravel of the Editorial and Information Division; and to the Department of Northern Affairs and National Resources for three staff studies prepared under the general direction of Mr. J. R. B. Coleman, Director, National Parks Branch.

Helpful communications, written and verbal, were received from the following senior officers of government: Mr. Alan Field, Mr. J. D. Herbert, Mr. N. P. Robinson, and Mr. L. Brooks, all of the Department of Northern Affairs and National Resources; Dr. J. R. Harper of the National Gallery of Canada; Mr. R. H. MacCuish of the Department of Labour; Mr. R. P. Mulvihill and Mr. T. W. Ridley of the Department of Trade and Commerce; Mr. E. W. Humphrys of Northern Canada Power Commission; Dr. John Convey of the Department of Mines and Technical Surveys; Dr. E. W. R. Steacie and Dr. B. G. Ballard of National Research Council; Mr. Ian N. McKinnon, Dr. Robert D. Howland, Mr. H. Lee Briggs, and Mr. Douglas M. Fraser, all of the National Energy Board.

For information on the coal problems, and on measures taken to alleviate them in the United Kingdom, the United States, Belgium, West Germany and France, we are indebted to: the Belgian and West German Embassies in Canada; to the Department of External Affairs; to the Canadian Embassies in Belgium, West Germany and France; to the National Coal Board in the United Kingdom; and to Mr. Pat Conroy, Labour Counsellor at the Canadian Embassy in Washington, U.S.A.

We are under obligation to Sir James Bowman, Chairman, National Coal Board, London, England, for making available to the Commission the services of Mr. W. V. Sheppard, Director-General of Reconstruction. In view of the important role Mr. Sheppard is playing in United Kingdom's efforts to deal with its own coal problems, this assistance was most valuable. Mr. Sheppard, assisted by Mr. A. Brown, Head, Mining Research Section,

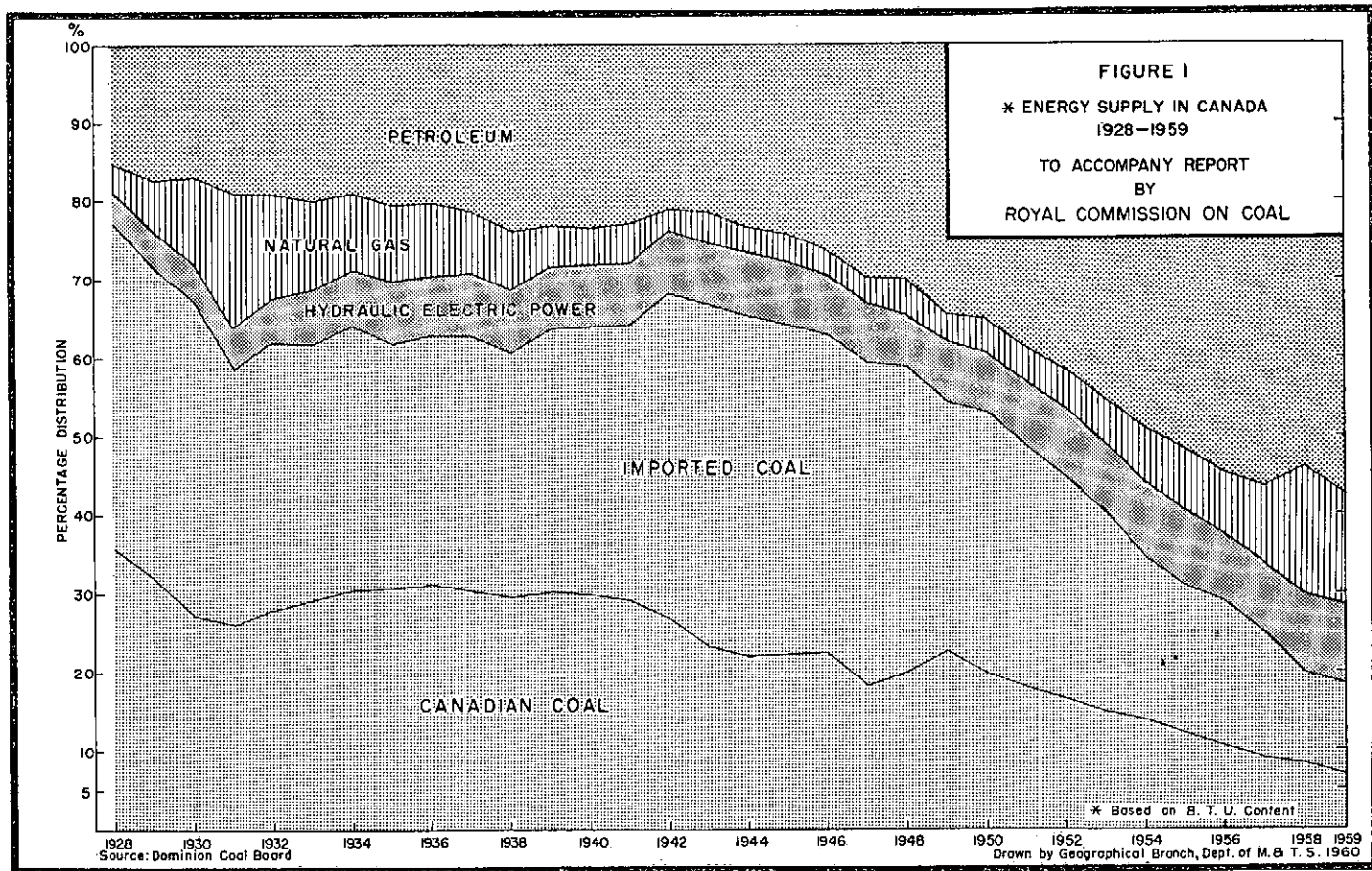
Foreword

Fuels and Mining Practice Division, conducted a critical examination of the operations of the various coal subsidiaries of Dominion Steel and Coal Corporation, Limited, and for his report, annexed as Appendix N, the Commission remains his debtor.

Throughout the enquiry full co-operation was received from all sectors of government, labour and industry. On the Nova Scotian aspect of the enquiry, there was the most ready willingness on the part of senior officers of the Government of that Province, of the Atlantic Provinces Economic Council, of District 26 of the United Mine Workers of America and of Dominion Steel and Coal Corporation, Limited, to meet with the Commission regardless of personal inconvenience.

The Commission was assisted by Dr. A. E. Cameron, of Halifax, N.S., whose experience and knowledge of both the Eastern and Western coal mining industries were of much benefit; by Mr. H. R. Pettigrove of the federal Department of Labour, Fredericton, N.B., for advice during the course of the public hearings, and mine and community visits; and by Mr. W. A. D. Gunn, Q.C., of the firm of Gunn & Gunn, Sydney, N.S., who acted as counsel during the course of the hearings.

The immediate members of the staff, Mr. John J. Ellis, Administrative Officer, and Mr. Ian B. Browne, Research Statistician, carried out their duties with the utmost satisfaction; and by Mr. W. Keith Buck, as Secretary, the general management and direction of the Commission's work was of the highest competence.



Report of ROYAL COMMISSION ON COAL

THE Report of the Royal Commission on Coal (1946) sets forth in comprehensive detail as of that time the background and other relevant data of the coal industry of Canada. The enquiry, begun in 1944, was concerned with a situation in which, as a fuel, coal was dominant and the competitive supplying of Canadian requirements was the primary issue. Hydro-electric generation was furnishing eight per centum of the total heat energy used in Canada; petroleum (virtually all of foreign origin) was well launched on its striking career and was providing more than three times as much as hydro; coal was contributing more than 60 per centum and the remainder was supplied by gas and wood. The Canadian production of oil was insignificant and natural gas in any quantity was confined to Alberta.

The scene today reverses that order of supply; discoveries in Alberta in 1949, with the astonishing increase of production in the Middle East, South America and, to some extent, the United States, to put aside that of Russia, have placed oil in a commanding position. Alberta gas in huge supply has followed, and both oil and gas from that Province flow in pipelines from Edmonton to Toronto and Montreal respectively. Further extensions easterly of both may eventuate. Hydro power has likewise expanded vastly and although Ontario is near the end of water resources, in Quebec a formidable reserve awaits development.

The immediate issue for coal is thus seen to have been transformed: it is not now so much coal competition as interim continuity. The technical advances in the manipulation of liquid or gaseous hydrocarbons have been such that virtually only economics has become the limiting factor to a complete utilization from the crude material to the varieties at the boundaries of scientific imagination. Energy in Canada, as in the western world generally, is now at a flood excess and the problems of the Canadian coal industry, relatively minor in the conspectus of Western Europe and the United States, have become of concern because of special geographical, industrial and social circumstances.

The 1946 Report recommended a continuance by the Dominion government of assistance to coal production but in the form of transportation subventions, a change from a war policy of operating deficit or production subsidies affected by war price policy. The prewar mode of support begun in

Royal Commission on Coal

1928 was in general related to ton-mile costs in transportation with specific amount limitation. From that beginning to March 31, 1945 Nova Scotia received in subventions on shipments to Ontario, Quebec and New Brunswick \$25,420,225.54 representing 21,332,480.52 tons. Within the same period the production in that province was 108,753,978 tons. In the years from April 1st, 1945 to 1959-60 (March 31st) inclusive, the total subventions reached the sum of \$73,979,991.49 representing a tonnage of 26,436,379.09. For that period the production of Nova Scotia was 84,401,088 tons. This gives a total amount of subvention of \$99,400,217.03 on 47,768,859.61 tons out of a total production of 193,155,066 tons.

From 1928 to 1959-60 (March 31st) inclusive, New Brunswick, a small producer, received in subventions \$1,075,322.70 on 771,195.61 tons out of a total provincial production of 16,321,914 tons; Alberta and British Columbia \$32,102,208.72 on 16,843,404.01 tons, out of a production of 248,-942,924 tons; and from 1930 to March 31, 1959-60 Saskatchewan received \$2,422,801.60 on 3,668,503.11 tons out of a total production of 46,202,554 tons.

In 1946 the largest individual consumers in both Eastern and Western Canada were the railways to which in the year of highest consumption, 1948, the tonnage supplied was 12,421,672. By the end of 1960 not a locomotive on the two transcontinental systems will be using coal.

The domestic use was extensive and, apart from manufactured gas, except in localities in Alberta, Ontario and New Brunswick, where natural gas was being produced, its competitor was wood. Today, wherever gas or oil is available, they have largely displaced coal. As fuel for industry or thermal power and, as to part of that use, with the aid of subventions, coal remains to a degree competitive but the retention of that position can only be described as a struggle. A similar condition affects commercial supply such as for apartments, business buildings, or institutions.

As bearing on the refinements now appearing in the requirements of consumers, a word on the formation of coals may be in order. They are the deposits of organic matter in its annual death and decay in vast depressions or basins of swamp or bog lands with all degrees of water saturation and covering. Through aeons of time these annual accumulations have been exposed to floods, storms and cataclysms of nature. Through chemical reactions, physical pressures, processes and upheavals they have been brought to their existing conditions. They are found in seams varying in thickness from a few inches to 50 or more feet; the seams may be flat or gently undulating and shallow in depth, or sharply dipping and deep. They may be wholly surrounded by land, may be submarine or sloping from

Royal Commission on Coal

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land to submarine as is the case in the Sydney, Cape Breton, district. It follows from the mode of formation that each seam is virtually a unique structure; between seams there may be layers of limestone, sandstone, shale, clay or other materials or a mixture of them; the coal may be moist or dry, it may contain sulphur, ash or other foreign substance; it may be old and hard, compacted by pressures, or young and soft or flaky; old coal may have been forced up toward the surface and young coal thrust down deeper. A seam may vary in its qualities and run off into a degrading mixture; it may show disruptive faults which break its general lie; rocks may intrude; a seam may exhibit high or low volatility; it may possess coking qualities which furnish strength to the coke structure for blast furnace utilization; the ash, either inherent in the coal or intruded, may have a low or high fusion point; low ash fusion produces clinker and seriously affects both combustion and fireboxes. The combination of particular qualities required for coke used in metal production is not capable of precise specification but the desired combination for particular metallurgical uses may be exacting. Sulphur in excess may be equally obnoxious as in steel for particular purposes. This detail of possible composition is sufficient to indicate that today mere "coal" is not enough: required properties must be present in a steadily increasing degree of quantitative and qualitative refinement. In addition to these considerations, mines may be accessible from any direction which facilitates means of ventilation or new entrances or exits; but when submarine, these features are either excluded or, as in ventilation, furnished at much higher cost.

Similarly is it in the preparation for market; size, quality and uniformity are of increasing importance and they may call for operations that can be furnished only by expensive installations. Most coal for industry is fired by stoker or is used in powdered form: in the former the demand is for a screened size; in both modes, chemical and physical properties must meet the needs of the furnace for which general uniformity is essential; in many instances specifications for ash and sulphur content must be met or the market turns away. All of these considerations have a direct bearing and influence on the Canadian industry, particularly that in Cape Breton.

Owing to the coal deposits being geographically at the eastern and western extremities of the Dominion, and the concentration of industry in Western Quebec and Ontario, the coal needs of the latter have been the subject of much policy controversy. The demand for "Canadian markets for Canadian coal" was examined in the Report of 1946 and the conclusion reached by the majority of the Commissioners that "Independence may be physically possible, but it is too impractical to merit further attention. Central Canada must therefore continue to rely on United States sources of supply", is one in which I respectfully concur.

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The known substantial deposits are found in Nova Scotia and New Brunswick in the East, and Saskatchewan, Alberta and British Columbia in the West. There is a small production in the Yukon but for the purposes here that area may be disregarded. New Brunswick possesses reserves estimated by the operators in 1945 at from 18 to 25 million tons although in Table IV on page 40 of the Report in 1960 of the New Brunswick Royal Commission on Coal an estimate of 42 million tons of calculated recoverable coal is shown; the seams are thin, and are worked from 19 inches up in thickness; they are shallow, and during the past 15 years most of the production has been by strip mining. Saskatchewan has large reserves of lignite, a low rank coal, with high moisture and reactivity. As appears from the Report of the Commission of 1946 at page 26, the seams run from five feet to eight feet in thickness and, shallow in depth, are mined by strip operation. In Alberta and British Columbia the largest deposits are to be found, chiefly in a band running north and south just east of the Rocky Mountains. The coals, apart from some semi-anthracite, are bituminous, sub-bituminous and in Eastern Alberta some lignite. The first is a high quality fuel, possessing generally good coking properties. Nova Scotia has the next in quantity of bituminous resources. The principal and bulk of them lie in the Sydney district of Cape Breton. On the western portion of that Island smaller deposits mostly of lower rank are found in scattered districts. On the mainland of the Province, mining centres around the New Glasgow-Westville-Stellarton district in which the existing reserves are small, and in the Springhill, Joggins, and River Hebert areas. The deposits at Springhill were large but operations running for over 85 years had reached a depth of over 4,000 feet when a severe "bump" in 1958 brought about a complete closure by the Dominion Coal Company. A proposed revival of mining on another flank of the deposit may commence operations on a small scale this year.

Toward this Canadian potential energy there has been an unfortunate tendency to exaggerate quantity and quality. From a geological standpoint there may be a measureless endowment; but from the view of practicability in mining and disposal in consuming markets, it is very much less indeed. Much of our present mineral territory is difficult of access and unfit for general settlement; many of the mineral deposits are of low and marginal character; and only by the application of the highest technology can they be brought to serve economic purposes. Coal suffers only in less degree from analogous difficulties and handicaps.

In 1913 a world survey of coal was made which attributed to Canada deposits amounting to over one trillion tons. This was a geological estimate: the quantity lying within the country's territorial boundaries. It took in seams

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of one foot and upwards in thickness; a depth of 4,000 feet was assumed; it made no distinction for qualities of classes; and it was based on the broadest geological and structural criteria and a maximum of geological interpretation. There were included "possible" reserves as well as "probable", but what reached the general public was the total, and its proportion of the world's supply, 16 per centum. In the light of continuing geological investigation, this was extravagantly excessive and the past 47 years have disclosed much to correct it. The most recent estimate, prepared for this Commission in the present year, is shown as a bit under eight per centum of the 1913 world estimate.

In this exaggeration Nova Scotia has been enveloped. There can be little doubt today that informed opinion is that the total quantity appearing in the Report of 1946, i.e. 1,557,203,000 tons, although represented to be the economically recoverable quantity, was, at most, the quantity available to keep the existing mine system at work for say the next 200 years. To indicate the danger of accepting that and other figures shown it is sufficient to mention three items of the estimate. The colliery in the Glace Bay area known as #4 was estimated to produce 37 million tons during a lifetime of 94 years; Colliery #16, a quantity of 15½ million tons and a lifetime of 30 years; and the Florence Colliery, with 8½ million tons, was given 34 years of operation. All three mines are now regarded as having reached the limit of economic usefulness, whether from deterioration in quality, difficult mining in undulating seams, thinness of seam, stone intrusions, variations in ash, excessive bands of rock, physical layout of the mine, bad roofs and floors, or necessary costly ventilation and new slopes; all handicaps to economical and merchantable production. This emphasizes the uncertainty of what advancing extraction may meet and exemplifies the hidden hazards of the original formations. To add significance to the examples given, Colliery #25, in the Gardner seam, estimated to have a reserve of 3½ million tons and a life of 25 years was, on account of deterioration in quality, closed in 1959; and the Springhill collieries, with estimated reserves of 17,192,000 probable and 44,520,000 possible, recoverable tons, were, as already mentioned, shut down completely in 1958.

The refinements in specifications for fuels have reached the point of purchase on the basis of heat potential, measured in what are known as British Thermal Units. A pound of ordinary bituminous coal, for example, has roughly between 11,500 and 14,000 B.T.U.s.; a thousand cubic feet of natural gas has one million heat units; a kilowatt hour has 3,412 units; and, again roughly, 5½ gallons of residual oil, one million. Where this unit has become the basis of price, deductions are made related to the presence in the coal of impurities, sulphur, ash, moisture, all of which have become

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significant to coal efficiency. For certain purposes, sulphur should not exceed one per centum; ash should be less than eight per centum and have a fusion point not below 2,100°F; moisture is a dead weight of waste; and where volatile components are not efficiently utilized they represent a direct heat loss. To all these requirements are added crushing, screening, washing, oiling and blending, called for to meet modern requisitions.

Along with these exacting items mining operations themselves, with their safety and efficiency demands, have become works of complicated engineering. Every mine, in large measure, is, as already remarked of seams, unique in its character, with seam dips, faults and foldings, surrounded by strata of uncertain pressures and with gas, bumps, and other hazards to contend with, all increasing as depth grows greater.

This intensifying complexity is paralleled by accelerating economic pressures. The ultimate and controlling question is, what does it cost to bring coal to the point of utilization and what is the demand for it there? Deposits within the Arctic Circle would contribute nothing today to the Canadian economy; in the remote future they might, but not in this era. Only in less degree is it economically unwarranted to sell Crow's Nest Pass coal in Toronto or Sydney coal in Windsor, Ontario. World-wide industrialization is producing a struggle for markets which, as an obvious necessity, is demanding imperiously constantly increasing scientific research, advancing technology and the elimination of every form of waste and of non-utilization: a ceaseless drive for greater efficiency and more complete utilization. To that pressure coal is exposed on all fronts; and only by the utmost efforts of all concerned with its continued participation in the industrial economy of this country can that participation be maintained.

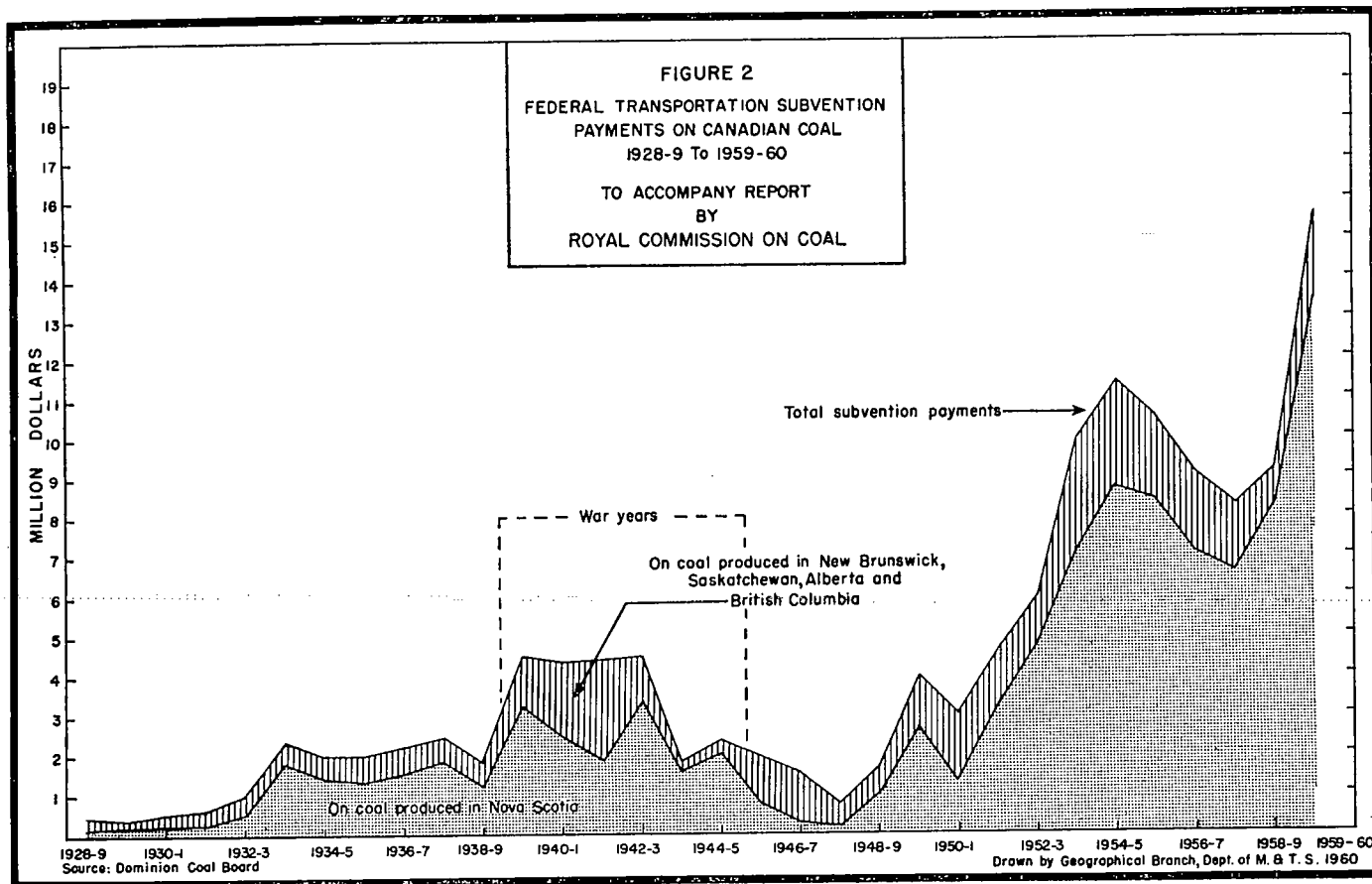
These considerations are in the aspect of the purely industrial economics of production of material goods and services as a vital function in modern society. They are normally to be accorded the primacy of weight and influence and their disregard in other than exceptional situations involving overriding factors will invariably drag a community into perilous consequences. Admittedly, the coal industry of Canada is in dire straits; it has, in fact, been in that condition for some years; and only by resort to non-economic measures has social disaster, in some instances, been avoided. How, then, should that critical situation be met? By the prevalent theory of private enterprise the weaker competitor must be left to his fate and the exemplification of the workings of that principle is vividly shown by what has been happening to the coal mining industry of the United States, some details of which I shall mention later. From a strictly economic point of view the application of that principle to the coal industry would be the

simplest and most effective mode of dealing with the problem presented. Should we then allow disaster to take its course or should we resort to efforts to try to salvage, in part at least, existing social and political values? In the latter case, what are the considerations on the basis of which action can be taken and to what extent can that action be fairly justified?

Of these two courses there can be no serious doubt of which must be taken. This country has been conceived and so far brought along since 1867 primarily in terms of political and social considerations: economics, by a counter-balancing empiricism of those factors, have been harmonized with national unity and the spirit of a prosperous and progressive people. While, then, economic principles may seem to be outraged by the means of support to the coal industry of the past, in the view of the national interest as a whole, their price has been a small item in the general national ledger. But that is not to justify them as a fixture with unlimited bounds. The pragmatic policy underlying them, by its nature, must regard every aspect of its subject matter and modification in any direction indicated by results must be accepted as essential to such a policy. The policy has been primarily one of direct and indirect financial assistance to the marketing of Canadian coal in Canada, with supplemental assistance to the export of coal. At this time, the only case of the latter is that of the sale of coal to Japan which will be considered later.

For upwards of ninety years duty has been imposed on imported bituminous coal, effective almost wholly on imports from United States: today that duty is 50 cents a ton, with its impact primarily on Ontario and Quebec; but its competitive effect on Canadian coal in these markets is absorbed in the extremely low cost of production in the United States which, in many mining areas, is less than one-half the cost in the Sydney district. The financial aid has enabled quantities of Nova Scotia, New Brunswick and Alberta-British Columbia coal to meet foreign coal in the central Canadian markets and to an extent, to enable lignite from Saskatchewan to reach industry in the Lake-of-the Woods district of Ontario. Subventions have been paid in increasing amounts since 1928; and in order that the problem may be fully presented it will be necessary to set forth the facts of production and assistance in which the Dominion, through the policy followed, has involved itself.

In the early twenties difficulties in the coal industry, chiefly in Nova Scotia, became a political topic and following Committee enquiries by the House of Commons subventions related to the transportation of eastern coal to points in Quebec and Ontario, and of Alberta-British Columbia coal



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to points in Manitoba and Western Ontario, were instituted. With many changes in bases and area application the following tabulation shows the development since then of the payments and tonnages:

		<i>Amount</i>	<i>Tonnage</i>
1928-29	Nova Scotia	\$ 173,500.82	201,504
	New Brunswick	512.60	337
	Alberta-British Columbia { Crow's Nest area	289,650.53	49,231
1945-46	Nova Scotia	799,318.90	460,287
	New Brunswick	440.70	682
	Saskatchewan	12,964.64	13,521
	Alberta-British Columbia	950,371.50	485,318
	Alberta-British Columbia Export	15,583.06	20,777
1959-60	Nova Scotia	13,518,396.11	2,414,786
	New Brunswick	289,756.39	155,702
	Saskatchewan	102,608.36	121,326
	Alberta-British Columbia	411,616.57	134,665
	Alberta-British Columbia Export	1,168,699.58	263,542

A complete statement of these annual items for the total period is given in Appendices H and I to this report.

In addition to that form of aid, a great many other measures were taken all designed to strengthen the industrial position of coal. In Appendix J there is set forth, in summary form, a list of these measures which evidence the comprehensive action from time to time taken by Parliament in furtherance of its coal policy.

From all of this assistance, it is patent that the coal industry, especially that of Nova Scotia, is not in a position to complain of a lack of sympathetic appreciation on the part of the Dominion government of its handicaps or of social interests involved.

As mentioned, the basis on which subventions have been computed has, from time to time, been changed; but it will be sufficient here to annex as Appendix K copies of the Orders in Council in force during the year 1959-1960. The language used in them, "cost", is to be taken as cost to the purchaser or price; an interpretation which met squarely the competitive factor. In the administration, moreover, in Eastern Canada no distinction has been made between the different coals related to their heat value or other significant characteristic; and that distinction seems to be absent in marketing United States coal in Canada. In the result, the price that would enable Nova Scotia or New Brunswick coal to be sold competitively with United States coal, that is, at the price of the latter at the destination point, became the amount on which the subvention was calculated notwithstanding inferior quality of the Canadian product. For example, if the heat value of a provincial coal was less than the general run, for which a lower price would

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generally follow, the difference would be added to the transportation subvention; in other words, lower quality was given the same selling price, through subvention, as higher quality: quality, as well as production and transportation costs, was equalized in price.

In Alberta a distinction has been made in that no subvention has been provided on shipments of a class of sub-bituminous known as Grade V. The lignite coal produced in Saskatchewan has always carried a lower subvention rate per ton than Alberta coals.

As is seen from the Orders of Council, the use of coal in railway locomotives was made a special case as was other use of coal by railways. By the Canadian Coal Equality Act R.S.C. 1952, C. 34, a subsidy of 49.5 cents a ton was made payable to steel companies on all Canadian coal used in steel manufacture, a benefit that accrued only to the steel operations at Sydney, N.S. Two steel mills in Ontario, Algoma Steel Corporation, Limited and The Steel Company of Canada, Limited, participate in the ownership of mines in the United States from which their coking coal is obtained; until 1950, on coal imported for use as coke in the smelting of metals from ores, a rebate of 49.5 cents a ton was made against the tariff rate of 50 cents, but in that year the tariff impost was removed on all coal imported for coking purposes. Further assistance has been given to encourage indirectly the use of coal for the production of thermal power in the Atlantic Provinces (Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland); this is authorized by the Atlantic Provinces Power Development Act 1958, C. 25. The sums allowed are advanced to the provincial Power Commissions of Nova Scotia and New Brunswick and by them distributed equitably among the operators of power plants for the benefit ultimately of industrial users of the electric energy produced. Capital funds assistance by way of loans, for, among other things, mechanization of coal mining, is provided by the Maritime Coal Production Assistance Act, (1949 (2nd Session), C. 39), a name changed in 1959 by C. 39 to Coal Production Assistance Act. Under this Act the Dominion Coal Company Limited, marketing approximately 90 per centum of coal in Nova Scotia, has received a loan of seven and one-half million dollars to enable the mining in the Sydney district to be more fully mechanized. This work has been proceeding for the past 11 years; approved by the Dominion Coal Board in the expectation of considerable economies in production, the results have not met expectations although there has been a modest increase in man-shift production. The probable reasons lie in the mine structures and operating factors which are the subject of comment in this report and in that of Mr. W. V. Sheppard annexed as Appendix N. The new equipment has introduced a change in machine mining and loading on long walls in the deeper levels of the field. The evidence satisfies me

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that the policy pursued was sound: the operations had reached a stage at which economy of production combined with safe mining called for a change of method.

As Appendix H shows, the last seven years, and particularly the last two years, have seen a startling increase in the total of subvention allowances. Subvention payments in 1959-60 of approximately \$15,500,000 on the movement of 3,090,021 tons of coal, including lignite, is an amount which has brought to a culmination the "problem" of Canadian coal mining, a figure which in my opinion the future should not see exceeded.

What has precipitated this extraordinary contretemps is the appearance of oil and gas, as fuel, in such volume and at such prices as virtually to threaten coal, for fuel purposes, for the time being, at least, with extinction. It is not a Canadian phenomenon only; this invasion during the last three years has, like a pestilence, swept over the United States, Britain, France, Belgium, West Germany and even Poland, all large coal producing countries. A short statement of the conditions facing them at this moment will indicate the straits in which coal generally is bogged, not all of which, however, as will be mentioned, are to be attributed solely to oil and gas.

The United States including Alaska, possessing the greatest deposits of bituminous coal in the western world, exhibits the following facts. From seams of three feet or more in thickness and reaching a vertical depth of an average of 400-500 feet, of a generally horizontal and shallow lie and with accessibility from all angles, the production in 1947 of 630,623,722 tons has dropped to 410,445,547 tons in 1958 and an estimated 410,000,000 tons in 1959. In the same period the labour force has fallen from 419,182 in 1947 to 197,402 in 1958 and to an estimated 174,100 in 1959. The average of days worked in 1947 was 234; in 1958, 184; and in 1959 an estimated 194. The mines generally have been highly mechanized and coal prices have varied little during the last 30 years. The wages have reached the highest level ever obtained in the coal industry, \$25.00 a man shift. The level and comparatively shallow workings of seams of good-working thickness present the most favourable conditions for economical production and there is no doubt that the efficiency attained is not equalled elsewhere.

In Britain from an output of 220 million tons in 1958 production has fallen to an estimated 180 million tons for 1960. Four years ago the prospects for coal were so bright that importation became substantial. Within a year, however, the outlook had been reversed and from 1957 the inflow of oil from both America and the Middle East has swept coal back to the dimensions mentioned. Paralleling this there has been a persistent pressure of research to bring nuclear energy within a competitive range.

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Belgium faces the task of providing work for 25,000 displaced miners made and to be made idle by oil; West Germany, for similar reasons, has double that number to provide for; France, winning both oil and gas from the Sahara and now working out plans for piping the latter to the continent under the Mediterranean, must, apparently, furnish substitute work for a number roughly the same as Belgium.

In the United States subventions and any other form of direct public aid are unknown; the consequences of ruthless competition are accepted as normal business risks by employer and employee. That principle has been the guiding light of John L. Lewis in his drive for 100 contented in preference to 200 discontented workers. Since the miners affected in Canada are, as groups, affiliated with the United Mine Workers of America, the labour policy pursued by that organization is a relevant circumstance to the problem here. Efficiency under the principle of private enterprise means that only by the test of cost, i.e., competitive strength, is a mine entitled to continued life: if cost prevents competitive action in the market, then the mine is out of the running and the displaced workmen must resort to their own efforts to seek and obtain new employment. In an interview with Mr. Lewis, published by the United States News and World Report issue of November 9, 1959, some striking answers were given by him:

"The United Mine Workers not only cooperates with the operators on that (modernizing mines); we invented the policy. We've encouraged the leading companies in the coal industry to resort to modernization in order to increase the living standards of the miner and improve his working conditions"; "It's the story of the free enterprise system and what it can do—without a dollar of public aid, without the 27 per cent depletion allowance of the oil and gas industries"; "the principal operating units were owned by the railroads. They were steadily falling behind because they had not modernized. They decided to introduce new machinery. We knew that it would cut the work force in half. It was bad news, but we were obliged to tell the men that we thought it was a contribution to the American economy and to the success of these great industries . . . We told them that the men displaced by the machines would in part be absorbed in other segments of the economy." To the question "Do you believe that efficiency must be pushed even if men lose their jobs?", he answered: "We are not trying to keep men in the mines just to retain jobs." The entire statement is an affirmation of the principle of competitive ability to survive; it emphasizes mechanization but it embraces equally every factor affecting economic competitive vigor.

This utterance is particularly significant to present conditions in mining districts of West Virginia. In the interview Mr. Lewis spoke of a mine, the Loveridge, in that State as an example of his principle in action: "That mine

and its most modern devices represents the potential of the coal industry for the future years. It is a triumph for the free-enterprise system—a system, incidentally, that is on trial throughout the world today . . . The Loveridge Mine people are modest in their predictions on that. They say that the mine will put out about 20 tons of coal per man per day. I think it will get out 25 to 30 tons per man-day . . . So, the average of our modernized mines is tremendously higher than the national average of 12 tons."

In an article published in the Saturday Evening Post of February 6, 1960, on West Virginia, a tragic portrait of conditions in some districts of a coal mining state is painted: "In the last ten years, mechanization of the mines, carried out with both the approval of the operators and the Union, has toppled the working force from 117,000 to less than 40,000. Scores of ghost towns have sprung up like mushrooms across the state, and thousands of men, especially those over forty, have no further prospects of re-employment in the industry. And yet more coal is being produced and sold than ever before." Speaking in the United States Senate on January 21, 1960, Senator Randolph, from West Virginia, spoke "as a citizen" as follows: "In 1959 in West Virginia we mined approximately 115 million tons of bituminous coal. This figure is somewhat like the figure for 1958, but 10,500 fewer miners were employed in West Virginia in 1959 than were employed in 1958. Yet the tonnage was practically the same." Exhibiting the grim picture of idle miners wasting on the empty streets, the article indicates what the advance of competitive fuels has done in the United States, forcing mechanization to the ultimate degree in order, in Mr. Lewis' language, to reduce "the unit cost of a ton of coal", the factor on which the entire industry depends for its existence.

When, in spite of all efforts, competing commodities destroy a coal market, if that ruthlessness, a relatively easy solution, is not to be followed, what measures are legitimately available? The means of meeting such a situation have been discussed ad nauseam in the European coal countries and in the United States and the conclusion to which one is driven is that it is nonsense to think that its difficult features can be relieved by any single means or without measures which represent, in one form or other, social assistance to its victims. Special taxes on oil have been debated; tariff impositions, new industries, chemical utilization and other uses for coal, these and many others have been canvassed indecisively and interminably; only the avowed preservation of a moribund industry as a principle appears to have met with general repudiation. All these ideas have been suggested to this Commission.

Where minimum costs are necessary in industrial competition and are unattainable, as here, and the security of communities as well as industrial

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and natural resources are in such special conditions as to be justified in their claim to some degree of preservation, is a tribute from the general benefit accruing from such a supersession as is present here an objectionable means to the end sought? Where large sums are the price that must be paid for that sustenance, the question must be asked whether their application to such a purpose is itself the best mode of application, whether it will produce ultimately the best results. Some aspects of these questions will now be considered.

The most obvious dictate of such a condition is that of bringing to mining areas new industries by which new productive wealth can substitute for that which has ceased to be provided. In the older countries of Europe and in the United States industrialism has become established on the widest scale and in thickly populated centres. In the United States this can be credited not only to the profusion of natural resources but also to the unsurpassed inventiveness which free access to those resources has generated. Britain with much fewer primary resources through necessity has developed a multiplicity of unexcelled skills; so, generally can it be said to be of continental European states. These habituated modes and refinements of work establish a tradition and an industrial familiarity which lead to and facilitate adaptability, evidencing itself even among those inheriting a coal mining occupation. But in the mining districts of Eastern Canada and in some parts of Western Canada, we do not have such an intensity of industry or the pervasiveness of industrial attitude and adaptability which it develops.

In addition to stimulating new industrial activity, steps taken in some of the countries mentioned include stockpiling but inevitably this has demonstrated its own futility; accumulation simply postpones, with additional burdens of debt, the day of reckoning, and not even that for very long. As a policy it is barren of merit except in an extreme and temporary emergency.

According to the best available opinion, as it has been given, the superior position of oil and gas will be maintained at least during the next 25 to 35 years, not, perhaps, with the margin of advantage at this time exhibited, but, certainly for many purposes, a sufficient standing to strain the best efforts of the coal industry. It seems to be agreed that the total energy which those resources embody is not of the magnitude of coal. Within a measurable period, then, coal, with its reserves, as for example, in the United States, sufficient to meet that country's demands for hundreds of years, will again be called upon to serve human needs in its present modes of utilization as well as others to which the progress of science and technology must inevitably attain. The condition of this is always that within the interim

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period nuclear energy is not reduced to competitive economical management and use. With hydro powers fully harnessed and oil and gas exhausted, coal remains hopeful for the future even under that Damoclean threat.

The problem is, then, of a substantial interim period. In this, the superiority of oil and gas for certain uses and purposes must be acknowledged, that of coal for others, leaving an area which may be looked upon as competitively open to all three. In this last they may become complementary and their contemporaneous availability an agency of continuity in public or industrial accommodation. Beyond much doubt, for general domestic purposes such as small space heating and cooking, and as a raw material in chemical manufacturing, gas finds its most efficient modes of utilization. Minor local needs for space heating and domestic purposes, where oil and gas are not available, will continue to be met by coal and, in this function, the smaller, so called independent producers, as in Nova Scotia, have a special advantage and justification. Their operations are scattered, there is little overhead cost, and they do not reach beyond manageable levels of operation or expense.

So far as can be seen, for metallurgical use coal converted to coke will continue to retain an exclusive role: notwithstanding the related chemical constituents of all three, oil, gas and coal, for such a purpose, the first two for certain metallurgical processes are ruled out economically; the production of oil from coal, in the flooded markets of today, is, for the same reason, put aside; and natural gas, for the time being, appears to have spelled the doom of artificial gas.

What are left to these three modes of energy, apart from metallurgy and the chemical field, are large space heating, fuel for light and heavy industry, and thermal power. On the assumptions mentioned, if not at the moment, then within 10 or 15 years, in these there will probably be a field of competition into which coal may more effectively enter. But certain features should be taken into account. From the standpoint of efficiency, the use of gas in large scale space heating seems to be wasteful and unwarranted; for such purposes its effective utilization, to say nothing of convenience, is not comparable with that of the other uses to which it may be put. That the future, as the immediate past, in so many instances, has demonstrated, will not extend its efficiency to products of much greater utility and value, is a conclusion to be rejected. At present there is simply a mad race for immediate and maximum exploitation to the destruction of incalculable values for the future. In the light of what is now proceeding, all thought of one generation being trustee of natural resources for succeeding generations becomes nonsensical. Similar is the case for gas in heavy industry and thermal power;

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and the irony of it is that domestic use is looked upon as a legitimate means of off-setting dumping prices to industry. These considerations are amply sufficient to furnish ground for the support of coal in its special fitness for such purposes.

Likewise is it with oil. The lower the prices at which residual fractions of crude oil are disposed, the higher must be those for the upper fractions. Reducing the former to still lower price levels may, on the other hand, lead to greater depth in fractionating, and that would tend to enable coal to meet demands for which it is best adapted. The elimination by that means of so-called residuals down to pitches and coke would be in harmony with the general refinements of the differentiated uses of energy now developing and would leave bulk consumption to the fuel which, in the public interest in resources generally, can most satisfactorily be allocated to it.

In industry and the production of electrical energy coal, then, will tend to find its greatest future use. Based on British Thermal Units, a ton of average bituminous coal is equivalent to 145.5 imperial gallons or 4.02 barrels of average residual oil. At the price of five cents a gallon, its heat equivalent is at the rate of approximately \$7.27 a ton for coal. The handling expenses of the latter must be taken into account as well as the installations costs of both. The method of firing most favourable for coal combustion is that of pulverization in which, as well as in stoker use, weakness of low ash fusion point is counteracted by the increasingly greater accommodation to which furnaces can now be adjusted.

A special condition has arisen in one locality and in the future may arise in others. The hydro development along the Saguenay River has produced more electric energy than its primary consumption, the production of aluminum, absorbs; there is consequently a surplus which is available for other purposes. This "secondary" use, as it is called, has succeeded in displacing coal in a number of pulp and paper mills and has resulted in enabling these industries to avail themselves of all three fuels, oil, coal and electricity by mere operation of switches. They are enabled also to contract hydro electric power on an "interruptible" basis, one frequently found in supplies of natural gas. The energy so disposed of is at prices resembling those of "dumping", and their effect on coal can easily be imagined.

As a component in the smelting of ferrous and non-ferrous ores, coal will remain indefinitely in demand; and in pig iron production improvements in processes may be looked for which may reduce somewhat the unit quantity of coal now required; but any reduction of that nature will most likely be offset by the normal increased pig iron output.

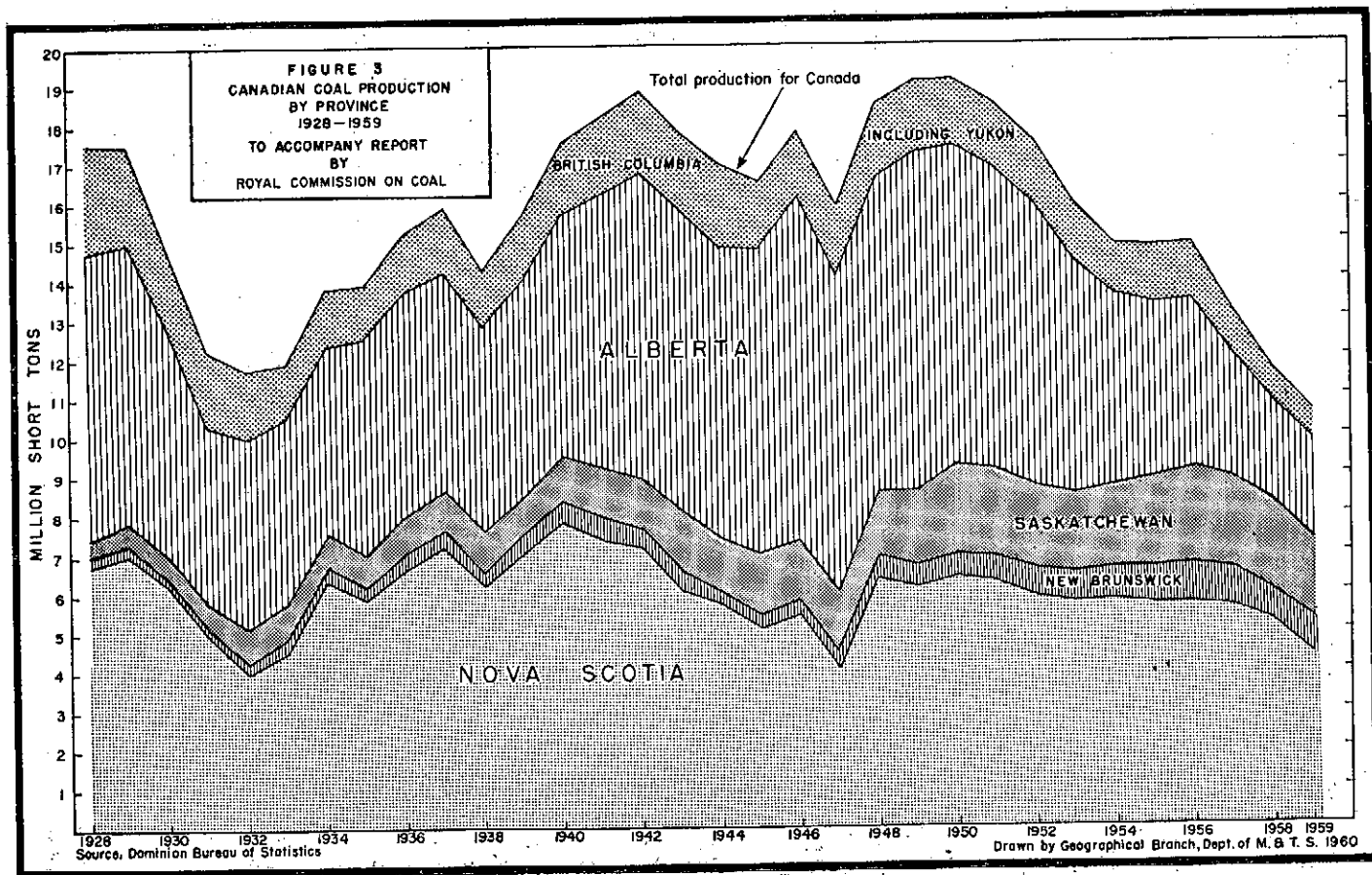
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In these enumerated uses lies the hope of sustaining, for some years at a minimal level, coal-mining operations. In the light of this conclusion what is the outlook for Canadian resources and how can that objective be achieved?

The difficulty of enunciating a "National Coal Policy", as it has been described, lies largely in the geographical distribution of coal in a country in which political and social contentions are at odds with economics. The Crow's Nest Pass deposits are approximately 2,000 miles and those of the Sydney district, 1,350 miles from Toronto; and 2,275 and 1,020 miles respectively from Montreal. The railway rates on coal to Toronto from the West range from \$9.96 to \$10.72; from Glace Bay \$6.31; to Montreal they are from \$11.46 to \$12.20 and \$5.09 respectively. During navigation Sydney coal is carried by water to Montreal and then transhipped by rail or water to Quebec and Ontario points; but with the St. Lawrence Seaway now in operation, self-unloading vessels of suitable capacity may be able to carry through to lake ports. Transshipments continue throughout the winter season, a period in which a substantial quantity from Nova Scotia, and throughout the year all from New Brunswick, is carried all rail to Quebec and Ontario destinations. The Seaway, it should be remarked, at the same time as it provides accommodation to coal shipped westwardly, presents a similar accommodation to United States coal moving eastwardly to Canadian ports and consuming centres. This work of such significance to Canada as a whole, as in analogous undertakings, appears to add one more item of burden to the difficulties facing Eastern coal mining.

All these factors, together with costs of production, encumber the coals with such a prohibitive expense as to render impossible ordinary competition in Central Canada. The tariff of 50 cents a ton has been in force since 1948 under the terms of the G.A.T.T. conventions; prior to that year, dating from the eighteen seventies, a rate varying above and below that figure had been in effect. But, as already remarked, the impost is a minor element in the economic disparity between the competing groups.

In fact, heavy as is the transportation charge on both Nova Scotia and United States shipments, greater mining costs in the former are sufficient in themselves to handicap entry into Ontario and Quebec points. For 1958 the average cost at the pit-head of Nova Scotia coal was \$10.72 against prices at the mines of United States coal shipped into Canada ranging from \$3.60 to \$5.33. A similar contrast shows in the average output per man-day. The average in 1958 at the Nova Scotia mines was 2.66 tons; in the United States it was over 11 tons and is steadily rising.



These are the elements in the Canadian situation which have given rise to the coal "problem" and have led to such extravagances in assistance. They demonstrate the futility of crying for a "National Coal Policy" in the sense of rational measures founded on ordinary business considerations. The latest development is that Eastern coal is now threatened by foreign oil with the loss of its Atlantic or natural market. In the earlier years when conditions were more favourable, a substantial market in the St. Lawrence Valley was secured, the maintenance of which, since the end of the Second World War, has in large measure been the object of the subventions, and the contraction of which will necessitate reduced production or an expansion of the local market or both. In the circumstances, and as already intimated, the conclusion to which the Commission is driven is that, to avoid a grave social disruption, assistance must be continued and its nature and justification become the principal purpose of the enquiry.

During the hearings of the Commission it was asked as a concrete example of what tariff protection has done to Eastern and Western purchasers, why one should be required to pay \$500 more for a Canadian automobile than for one made in the United States? Like questions were asked, among many others, of the millions of dollars spent on agriculture grants, the maintenance of price supports, the lately proposed adjustment payments to Western farmers based on acreage, the outlay for Western irrigation schemes, and, generally, the obligations assumed by the Dominion government for the benefit of railway workers and foreign investors.

These are mentioned only to show that what is now in process of becoming a nation of material and moral strength has not had its national policies fashioned according to the kaleidoscopic course of industrial evolution; what was envisioned by Macdonald and Laurier was a Canadian nation of free men and women with all sections of its land and people bound together by a community of interest and sacrifice, animated by the spirit of its northern setting, evolving a wholesome ethos and enjoying, so far as reasonable measures could effect it, a substantially uniform level of material prosperity.

In a true sense, although the provinces possess administrative jurisdiction over their natural resources, that administration is of a Dominion interest as well as of their own. The great iron deposits in Northern Quebec, by whom were they conferred on that Province? By the rest of Canada under whose absolute jurisdiction they remained until 1912; and Ontario's northern extension? and the carving out of the new provinces of Alberta and Saskatchewan extending northerly to the 60th degree of north latitude, embracing within that area the wealth a part of which is now embarrassing the Eastern coal operators and threatening to send its miners to walk the streets? The

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northern Territories now the object of national interest, for whose benefit will their natural resources be committed to a provincial administration? They, as all the others, are to be administered as wealth vested ultimately in a single Crown for the welfare and progress of the Canadian nation. That basic assumption, even though not at all times clearly articulated or even appreciated, has determined the broad measures of parliamentary policy of the past and has been the vital factor in creating a sense of national identity and solidarity.

The provinces of Nova Scotia and New Brunswick are not capable of extension to their territorial bounds; but their role in creating the nucleus in what is now a member of a world organization of states, was decisive; without them there could not have been the Canada we now know; and although plagued, no doubt, with geographical and economic trammels, they are not now to be relegated to the status of poor relations. They have played their parts in the national orchestration, answering, according to their abilities, needs and necessities, and with such credentials they present their submissions.

In this, however, there must be recognition of limits and what is called for must satisfy the sense of rational measure and balance. So far as possible each province must bring its capabilities into action and restrict national action to measures which it is not itself able alone to undertake. If assistance to any interest can be applied to a more permanent or effective purpose than one proposed, good sense dictates a change; and good sense will detect equally well when the boundary of acceptable policy has been reached.

A minimum of difficulty attends the reaching of conclusions on the Western coal situation; the serious condition is that of the East and in particular the Sydney district and to this attention must now be directed.

In the early stages of the enquiry, from criticisms in various quarters, none specific but founded largely on unrealized improvement in results in spite of confident prediction preceding heavy capital expenditures in mechanization, it became evident that nothing short of an independent survey of working conditions generally in the Sydney district by a competent coal mining expert would disclose the actuality of the operations and the basis for informed judgement on their efficiency. It would also put an end, in one form or another, to current local attribution of "inefficiency", charged against the Company, as responsible for the malaise of the industry in Cape Breton. As mining conditions in Britain are more similar to those of Cape Breton than those in the United States, a request was made of the National Coal Board for the services of an official to carry out such a survey. The

Board, acting through its then Chairman, Sir James Bowman, was most co-operative and in the result a survey was made by Mr. W. V. Sheppard, of London, England, a competent mining authority. His report, annexed as Appendix N, based upon a personal examination of the workings in every colliery, sets forth in detail his findings and recommendations. For this admirable critique of a controversial subject-matter, the Commission is greatly indebted to him, and to the National Coal Board. It is with the benefit furnished by that survey that any opinion expressed on matters of a technical character is ventured.

Coal has been a staple of Cape Breton's economy for upwards of 100 years. It furnished fuel in the early years of the 18th century, in the days of the Fortress of Louisbourg, and the 19th century saw a mining development of some magnitude. This was expanded in the early years of the present century and in a lesser degree to the commencement of the Second World War. Since the end of that conflict, and particularly during the past 10 years, it has gradually been beset with growing embarrassments which now present their critical peak.

The bulk of the coal deposits in Cape Breton, valuable in quantity and quality, lies within a stretch of about 20 miles extending from Glace Bay to Sydney and Sydney Mines, embracing a population of about 87,000, of whom 50,000 are wholly dependent on coal mining. The main deposits consist of a number of seams, two of which can be considered to contain substantial quantities of mineable and marketable coal, and a third, the Hub Seam, uncertain in its economically recoverable reserves. They outcrop in meandering lines on land within a mile or more of the coast and under water, and extend on an easy slope of from 10° to 20° toward and beneath the Atlantic. The lowest of the seams is called the Phalen, the second or intermediate, the Harbour, and the uppermost the Hub. The last, for mining purposes, must be entered by tunnels from the lower seams, as its outcropping, for feasible purposes, is under water. To the extent that the first two are within the shore line, they have been fully mined and the present operations are now submarine at distances of between two and three and one-half miles from that line. Worked by the Dominion Coal Company Limited and Old Sydney Collieries Limited, both, now, subsidiaries of DOSCO, together with the output in the New Glasgow district by the Acadia Coal Company Limited, another subsidiary, they reached in 1940 a maximum production in late years of 6,212,678 tons. In the year 1959 the output was 4,015,378 tons with approximately 8,500 persons employed. In the Sydney district, eight collieries are now in operation known as No. 4 and No. 16 in the Phalen Seam, the former entering in the Glace Bay area and the latter in New Waterford; No. 12, No. 18, No. 20 and No. 26 all in the Harbour Seam,

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No. 12 and No. 18 in New Waterford and No. 20 and No. 26 in Glace Bay; and Florence and the Princess, both in the Harbour Seam and in the Sydney Mines area.

The communities of the district include Glace Bay, New Waterford, Dominion, Reserve, Sydney Mines, and Florence, in which reside over 8,000 employees of the DOSCO coal companies. During the past 60 to 75 years they have been built up with homes, churches, schools, hospitals, municipal buildings, and other institutions; they have incurred and are now incurring necessary obligations to maintain their life on a level fitting and necessary to any Canadian community; generations have succeeded to the home, the traditions and the mining occupation of their fathers; and their roots in the soil of the Island are very deep. This anchorage has been rendered more tenacious by the shadows that from time to time have threatened large scale mining reductions in an atmosphere of distrust and suspicion of the purposes of the dominant Company; and the attitude has grown more militant and determined largely because its protests have invariably been followed by governmental concessions, as in increased subventions during the last few years, furnishing piecemeal adjustment. These temporizing mollifications have tended to handicap operators as for example in making term arrangements for water carriage, and embarking upon programs which required assurances of continued assistance. At any rate, during the past 30 years, the subventions have indirectly enabled if not made necessary, substantial additions to the social establishment, and have strengthened resistance to precipitate action. There is here not a community of foot-loose miners; never has their settlement been viewed as temporary; they have not been of the ambulatory class found in gold mining and the like to whom the trek from one district to another is normal. In this assumed state of permanence they were confirmed not only by the assistance given but also by exaggerated estimates of marketable coal reserves. Nothing in this was deliberate but its effect has aggravated the situation, the distressing features of which must now be faced.

According to the information given by the Dominion Coal Company on this enquiry, the present estimate of mineable coal (in short tons), with existing conditions including subventions to continue, is as follows:

HUB SEAM:	<i>Probable</i>	<i>Economically Recoverable</i>	
Access from #26 Colliery	16,389,000	16,029,000	
Access from #28 Colliery	19,558,000	17,329,000	
		<hr/>	33,358,000
Possible reserves:			
Dominion Coal Company	93,667,000		
Nova Scotia Steel and Coal Company	74,600,000		
	<hr/>		
	168,267,000		

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The latter company, another subsidiary of DOSCO has no estimate of probable reserves within its leased areas of this seam. As the outcrop of the reserves of the Dominion Coal Company is largely under water, these "possibles" are merely such; the indications are that the quality is inferior, and it would take substantial capital to explore them for probability; even more burdensome would be the capital required to open them, and the economy of any production can only be guessed at.

HARBOUR SEAM:

	<i>Probable</i>	<i>Economically Recoverable</i>
#12 Colliery	21,536,000	21,530,000
#18 Colliery	4,290,000	4,290,000
#20 Colliery	35,987,000	28,496,000
#26 Colliery	32,589,000	31,255,000
Lingan	42,600,000	39,000,000
Florence	4,872,000	1,530,000
Princess	28,555,000	25,000,000
Nova Scotia Steel and Coal Company	33,427,000	Nil
		<hr/> 151,101,000
Possible reserves:		
Dominion Coal Company	43,938,000	
Nova Scotia Steel and Coal Company	14,279,000	

The latter company shows possible reserves in two other seams in the Point Aconi area as follows:

Lloyds Cove	46,164,000
Indian Cove	4,429,000

PHALEN SEAM:

	<i>Probable</i>	<i>Economically Recoverable</i>
#16 Colliery	8,128,000	8,120,000
Lingan	50,800,000	47,000,000
Dominion #1B	28,781,000	21,371,000
#4 Colliery	20,319,000	20,319,000
		<hr/> 96,810,000
Possible reserves:	85,800,000	

The expression "economically recoverable", as applied to reserves means probable reserves which can be mined, with normal haulage systems, without marked increase over present operating costs per ton. It assumes that the quality of the coal remains constant. With present systems of haulage and where entry is made to the seam by slope from the surface, the reserves reach out a distance roughly equivalent to three lifts. Where entry is by shaft, two lifts to the dip from the haulage road mark similarly the extent of the reserves.

These estimates are within the seaward limits established by (a) Deficiency of seam; (b) Four-mile limit offshore; (c) 4,000 feet of solid cover over the seam.

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Estimates were made of the same reserves with a three-mile limit and the same solid cover as follows:

HUB SEAM:		<i>Probable</i>	<i>Economically Recoverable</i>
Total		19,417,000	18,343,000
Possible reserves:			
Dominion Coal Company		63,183,000	
Nova Scotia Steel and Coal Company		72,421,000	
HARBOUR SEAM:			
Total—Dominion Coal Company	84,493,000		80,144,000
—Nova Scotia Steel and Coal Company	31,806,000		25,732,000
			<u>105,876,000</u>
Possible reserves:			
Dominion Coal Company	13,909,000		
Nova Scotia Steel and Coal Company			
Harbour Seam	601,000		
Lloyds Cove Seam	37,529,000		
Indian Cove Seam	4,429,000		
PHALEN SEAM:			
Total	70,387,000	69,365,000	69,365,000
Possible reserves:			
Total	53,600,000		

The grand total of these estimates of economically recoverable coal at 4 miles is, 281,269,000; at 3 miles, 193,584,000; and the distribution is as follows:

At 4 miles: Hub	33,358,000	
Harbour	151,101,000	
Phalen	69,365,000	
		<u>281,269,000</u>
At 3 miles: Hub	18,343,000	
Harbour	105,876,000	
Phalen	69,365,000	
		<u>193,584,000</u>

These figures give a much more realistic judgment of the coal field than the earlier estimates. We may speculate that on today's scale of costs, and with drastic economies including the closing within 10 years of at least four collieries and the opening of the Lingan area, a quantity between 200 and 225 million tons might be mined at a cost of between \$9.00 and \$10.00 a ton. The closures would probably take in #4, #16 and Florence within five years, and #18, through exhaustion of reserves, within 10 years. Such a ton cost must be accepted as a disabling burden, which, if, at the end of ten years, the outlook continues as at present, will necessitate a further reduction in output. Within a period of say 15 years, supporting

alternative sources of economic activity may be at a level permitting such a reduction without severe dislocation of men or community; but the reduced production will continue to require the aid of subsidy. This is, indeed, daring the hazards of an unpredictable future, though based on a general continuance of existing conditions. Improvement through advances in science and technology may tend to increase the coal handicap rather than diminish it. There is the possibility that coal may be carried economically in pipes by water; or it may be the subject of unguessed-at chemical discoveries; or the highways of the provinces may be paved with it; these have been suggested but their realization lies beyond at least one speculative horizon.

The coal seams may run on under the ocean for many miles, but there is no purpose in bewailing the failure of the impossible. Not to emphasize this is to encourage deception; and the absurdity for the next ten years, to continue, without other action, a subsidy of over \$13 million a year is made obvious by considering what \$130 million, within that time, could bring about if put to a different purpose. What is there now of permanent sources of new productive wealth from the \$100 million paid out over the last 30 years? These are the naked facts and they cannot be evaded.

The Lingan reserve which has been mentioned is a block lying between New Waterford and Glace Bay embracing the Harbour and Phalen seams. As seen, it is estimated to contain within a three-mile limit, not more than 90 million tons of economically recoverable coal. Many years ago, in the last decade of the 19th century, this area was worked in the Phalen Seam, but the operation was closed by a fire which, from late reports, seems still to be smouldering. The block contains the last large tonnage from land outcrop the production costs of which, initially, will be somewhat lower; but the capital costs for opening will run to some millions of dollars, about the security of the return of which further comment will be made.

Because of increased costs generally, as well as intensified competition of United States coal, itself driven down in price by oil and gas, further mechanization at the coal face became a necessity; and the engineering proceeded on a mining structure that had already begun to approach economical limits of seaward distances. In addition to the long gathering roadways, these distances, already defined as generally those of three coal haulages or lifts to reach the surface, roughly correspond with the three-mile limits of the collieries except that of #26. In these conditions, the time required for reaching the coal faces becomes important. In several instances this is over 50 minutes and to carve two hours out of an eight-hour working day is not a matter to be regarded with indifference. This in turn points up the handicap of submarine operations: advances are possible only outwardly or seawardly and every advance adds an increment of time to reach it. With the

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far-flung operational areas now existing, the mining structure does not lend itself to highly efficient operations and, to a large extent, must remain so. This is not meant as a criticism of past engineering; but improvements within its general structural conditions are all that remain open to the present management, and only by new ideas, indicating new modes of action, can essential efficiencies of the nature in mind be effected.

The further mechanization was decided upon in 1949 and today is in operation in a number of the collieries. As its principal instrument what is known as the Dosco Miner was developed; it is based upon a machine devised in the United States for room and pillar mining and modified to operate on the longwall system of the Sydney mines. It consists of high speed revolving chains mounted on a jib and studded with sharp finger picks which, as the machine moves forward by caterpillar traction, makes a cut of about five feet six inches in width along the face of the coal extending as much as 500 feet, the "longwall" so-called, one lengthwise cut of which constitutes its daily operation. The coal is torn from the seam by the picks and in the same operation it is gathered up and discharged into a chain conveyor along which it is moved into a mobile loader and thence into waiting cars. Three of such faces are in some pits operated in line with each other. As the face advances laterally the roof of the excavated space is allowed to collapse and re-establish eventually a compact fill in a new equilibrium. The coal so mined results in about 65 per centum of "fines", sizes from one-quarter inch to zero, which handicaps the operator in meeting markets for larger sizes necessary in stoker use and for domestic purposes. This feature may prove to be not too objectionable, however, in view of the increasing use of finer coal for large industry and thermal power. The effectiveness of the operation depends on systematic prevention maintenance, which, reinforced with more thorough training of the machine operators, with both of which the report of Mr. Sheppard deals, should lead to a betterment in costs.

Labour relations call for some comment. They have a history of over 50 years which is unfortunate in the legacy passed on to the present generation. It would be profitless to review the record of conflict between management and men or to try to apportion blame. Probably in the early situation it was inevitable; the struggle for union recognition was then in its birth throes and between the rigidity of management, and the fury of men, frustrated not only by management but also by internal factions, struggle only could be the arbitrament. That strife left bitterness which, after several generations of transmission, though weakened, seems still to be lurking in too many minds. Its emotional embers are still fanned by persons outside of company and labour who are ignorant and, to some extent, influential. Of the

present management, whatever else may be said, integrity can be affirmed; and as personalities have played and continue to play a part in the drama, it may be permissible to dwell for a moment on several of the leading figures.

Mr. Harold M. Gordon, the Vice-President—Mining, of DOSCO, a graduate in Mining Engineering of McGill University, has devoted his life to the enterprise. It may be, and I would accept it as not an unfair criticism, that he has gone far in identifying himself with his accomplishment and in making his own will that of the Company. It was the natural course of a strong-minded and able man and it may be, although on this I pass no opinion, that judgments and attitudes, exclusively his own, have not always been as sound as they might have been or results those that have been promised. But he is universally respected for his courage, exemplified in situations of danger, for his honesty of mind and general masterfulness, for his knowledge of mining engineering, and in his desire to strengthen the life of the undertaking, of the course of which for years he has been the directing force.

Mr. Frank Doxey, since the early part of this year the General Manager of the Dominion Coal Company, is an experienced mine official whose early work was in the mines of Britain. He is of a liberal and flexible intelligence with an instinctive understanding of the men of the working force. One of his important objectives is to give the employees including subordinate officials such as overmen, mine managers, district officials and others, a greater sense of participation; to introduce those officials to the work of the several departments of the enterprise to enable them to appreciate the necessity of a harmonious correlation of functions, and to produce new attitudes in them toward the working force, as well as toward themselves. The ultimate aim is to take Union representatives into consultation, to discuss with them proposed courses of action, to hear their views, and to treat them generally as being vitally concerned with and participating in the daily functioning of the organization. This if accomplished will mean a new era in which trust and confidence between management and men will displace distrust and suspicion.

Of the Union officers, I will concern myself with only one, William H. Marsh, President of District 26, United Mine Workers of America. About his early forties, he is an approachable person with a gift of eloquence to express effectively his concern for his fellow workers and for his community. He is neither arrogant, insolent, supercilious nor cynical and, with any reasonable extension of confidence and co-operative attitude inviting counsel on matters which touch the daily work of the men, he will, in my opinion, respond with willingness and frankness. But he will be utterly loyal to those he represents, even, it may be, to the point of telling them what he believes to be the truth when the truth may appear bitter.

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The workers, on their part, have before them the duty of rooting out of their minds the notion that the arena in which they play their parts is a civil battleground between enemies. It has not, apparently, been realized that from a purely industrial point of view the parent company, DOSCO, would be better off without the coal operations; and that the senior management, judging them by their actions, at least within the past few years, have not striven to preserve the life of the operations in their present magnitude is, in my opinion, contrary to the facts.

For each of the years 1958 and 1959 deficits of over a million dollars have been suffered; and in the mechanization program a large loan was made by DOSCO, the payment of part of which is still outstanding. Can anyone imagine an operation with such results to continue indefinitely? The management from time to time made strongest appeals to governments for means to maintain operations and it is difficult to interpret this as the work of persons seeking to sabotage them. Since 1952 no dividends have been paid on preferred shares, and for over forty years none have been paid on the common stock, of the Dominion Coal Company. Where, one may ask, would the operations be were the company's organization to be dissolved or withdrawn? Only the existing administration could for the next several years meet the management and engineering problems now in prospect. In the United States, where the highest wages in the mining world are paid and the employees are the beneficiaries of the policies of Mr. Lewis and his successor, mines such as those of Cape Breton would have been abandoned years ago and the majority of the workers would have been left to the course of their fellow unionists in West Virginia.

To hand down as an heirloom this mental complex of bitterness and suspicion is to defeat the means of succouring the mining communities now facing formidable difficulties. Such a state of mind is more injurious to those who harbour it than to those against whom it is directed; and it has played a major part in producing the drabness which seems to envelope those communities like a pall.

It may be asked what evidence is there of a changed attitude on the part of the Company? One can only judge from the actions of its representatives. Mr. A. L. Fairley, the new president of DOSCO, an American from the southern United States, thoroughly trained in both steel and coal undertakings, is a man of keen and open mind who has given the strongest evidence of his intention, through the conduct of his officials, to bring about, on the Company's part, an end to the smouldering acrimony. The practice of withholding from mine managers all information of intended mining measures or changes affecting junior officials and men is, in these days, an out-dated practice which resulted from overweening confidence of self-sufficiency

and the arrogance of proprietorship, and the prospect is that it will be ended. Mr. Sheppard has referred to labour relations, and with his remarks I am in agreement.

Within the Union, tortured by the difficulties of dealing with a company operating an industry dependent on government assistance to survive, there is bound to be political struggling for the posts of leadership, and factions are presently unavoidable. The tough line with management is thought to be the most effective for success, and this generates the flood of public, but in most cases, ill-informed and mistaken, criticism. There seems to be a prevalent delusion that only by such demonstrations can a labour official vindicate his leadership.

One complaint, that the operating costs of individual collieries are never made public, appears to be justified. The answer generally given is that it would disclose valuable information to competitors. But who are the competitors? If the United States operators, they have the published reports of the Dominion Coal Board on the average costs of Nova Scotia mining and they could be concerned with the individual figures only in relation to the ascertainment of subvention based on competitive prices at destinations where shipments are confined to a particular colliery. That interest is, in my view, illusory; the lack of such information has played no part whatever in the international competition. But the details of each colliery are known to all members of the Dominion Coal Board which in its membership includes competitive operators in Canada or their representatives as well as a representative of importers of United States coal. The annual statements of the Dominion Coal Company read with the annual reports of the Board setting forth the total subventions paid to provincial groups, are sufficient to give, today, the most dull-witted competitor most of whatever information he might desire.

The hope for betterment in these relations is pursuit of the course of extending trust, of co-operating in mining direction, and in meeting operational issues as matters to be adjusted by rational discussion, not by infuriating exclusiveness. By this means, controversies will be aired around a table and the mining policies will cease to furnish the material of uninformed public clamour. In this I do not mean to touch disputes arising under the Union agreement or of adjusting individual complaints; I am concerned solely with bringing the labour representatives and those they speak for to a sense that they are jointly involved in the operations of the undertaking, and are being heard on the measures and proposals that will affect them and their interests.

Even the Union must concede, however, that management is vital and must assume responsibility and that managers are not available at a dime a dozen. They should remember too that "a man must serve his time to every

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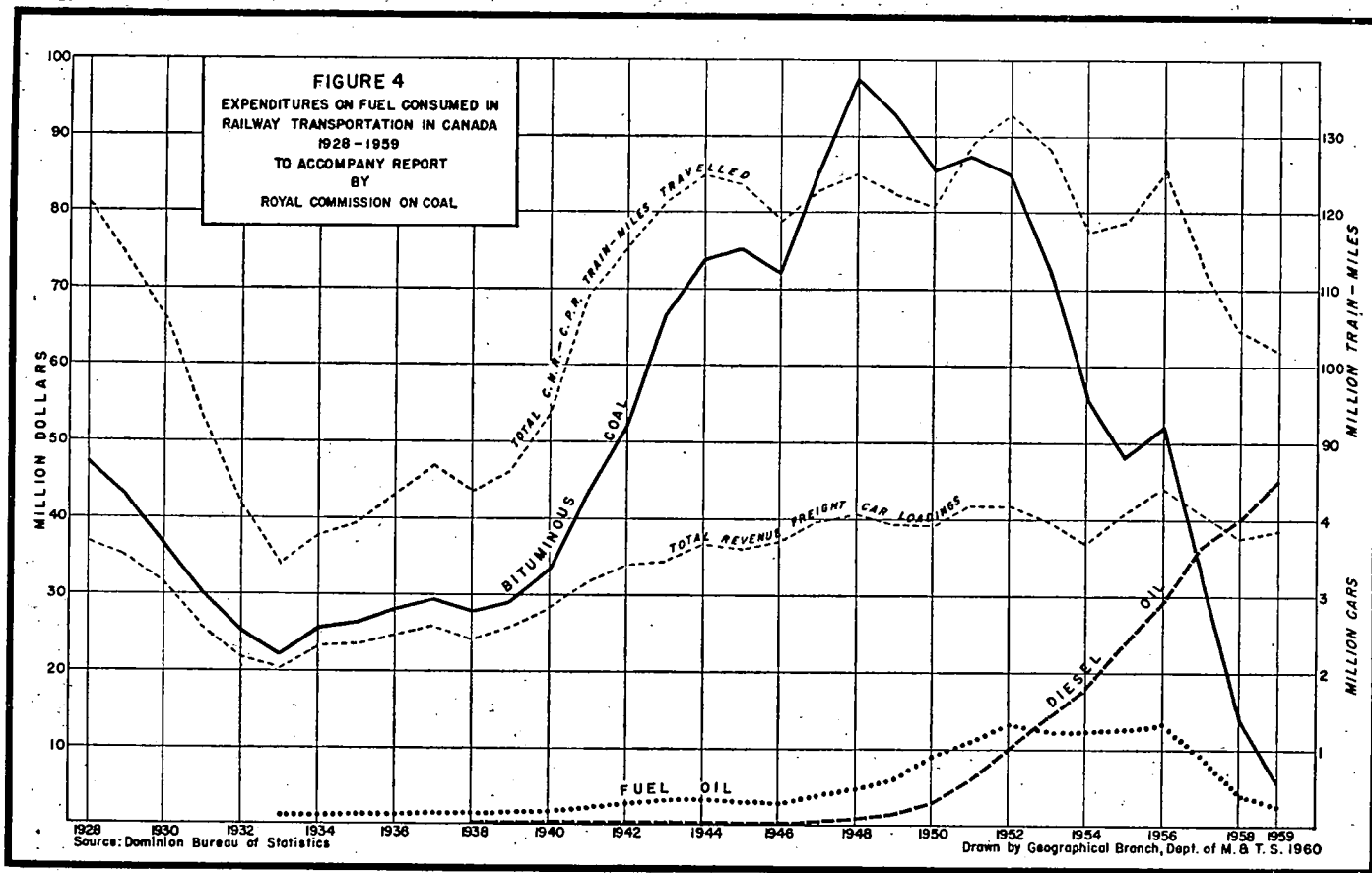
trade save censure; critics all are ready-made". Mining management by a group of laid-off miners has, in Cape Breton and, I doubt not, elsewhere, been tried out and has resulted in fiasco; and it is always dangerous to rush into criticism in the absence of full knowledge of what is in question. Consultation should eliminate general community criticism in which vociferous denunciation becomes effective only as pabulum for headlines.

The people who make up the communities concerned, miners and their families, clergy, professionals, tradesmen, skilled and unskilled workers, are of the ordinary stuff of Canadians, and, in general, are outstanding in personal relations, in friendliness and hospitality. But in such communities with the constant apprehension of mine closing hanging over them, there is bound to be, as there is, an ingrown outlook and a degree of social blight which, if not arrested, will grow steadily into social decay.

These are the conditions which prevail. Is that section of Cape Breton, with over eight thousand employees of coal operators, ultimately influencing, through the position of coal in its economy, the entire Island, to be written off and allowed to sink into that decay? Or must the governments concerned take such positive steps as will change the colour of things and replace an atmosphere of gloom and apprehension with one of hope and aspiration? To this, at least in this country, there can be only one answer; we cannot cut this Island off, and Canada, acting with Nova Scotia, must, in my opinion, provide conditions to enable it to regain confidence and affirm its will to a new vitality.

That course being what I consider to be necessary, there remain the practicable steps to be taken. Direct assistance to the mining works is the first and obvious one: what has been done for the past 32 years must, in some degree, be continued, for how long, however, no one can say. But the mode of that assistance as provided by the Orders in Council in Appendix K should, in my view, be changed.

Under those provisions, the subventions during the past 15 years have been available to the Eastern operators only to markets in sections of Quebec and Ontario and payments up to a maximum of \$9.00 a ton have been possible. I am unable to agree that this method has been successful or should be followed in the future. What is threatened today, and what in part has already been lost, is the coal market within the Atlantic Provinces and the Eastern St. Lawrence Valley area. That region may be called the natural market for the coal of Nova Scotia and New Brunswick, and may legitimately be said to reach as far west as Montreal. It is that market which, primarily, should belong to Eastern coal and, in the course of the next few years with the growth of business activity, be extended in quantity.



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The circumstances of the coal industry throughout the East and West of Canada, for reasons to be given, have created a general interest with which the Dominion government is concerned; and arising out of the ramifications of its widespread operations are local and community interests which concern primarily the provincial governments. It is on these two aspects of interest that a proposed change in the mode of assistance will be based.

The considerations underlying the first are these: Coal is at present being superseded in what formerly was its main function, that of enabling human beings to keep themselves warm, in addition to which, for railway services and for steam generation generally, it was, fifty years ago, the almost universal fuel. In both wars its necessity in transportation by land and sea was demonstrated. Oil and gas are premium fuels in the sense of their heat values and the ease and convenience in their utilization, but, as resources, they yield to coal both in volume and in concentration of energy; and it is conceded that they will be exhausted at a time when coal will have a thousand years of further life for mankind. The continued demand for coal in metallurgical processes generally, as already stated, remains. While we are still in the grip of international tensions, a wholesale closing of mines would run risks, not, perhaps, wholly definable but nevertheless real. It is true that by the end of this year not a locomotive on either of the two trans-continental railway systems will be using coal, for steam purposes, and that its use for water transportation has almost equally ceased. Several years would be required to bring coal back to its original position in either of these uses. Undoubtedly its availability acts somewhat as a check on competing prices of the other fuels for other purposes. Notwithstanding then, the accessibility and the adequacy for immediate purposes generally of oil and gas, coal remains a vital standby and a minimum, at least, of mining continuity should be encouraged as a Dominion interest. For this, the measure of financial assistance, direct or indirect, must be drawn from the circumstances of each mining district.

For that interest, what is proposed is a Basic subsidy on each ton of production of bituminous, sub-bituminous, and lignite coal, including briquettes made from the last, subject to conditions to be stated. Its design is to assist mines to maintain at least skeletal operations and in some degree to conserve existing mining investment values. The subsidy will be restricted to the highest quantity of production in any of the three fiscal years, 1957-58, 1958-59, and 1959-60, ending on March 31st.

The second or local interest to be benefitted will be that of the general social establishments, and its purpose will lie in conserving for future use the economic values of the local population which have grown up dependent on the mining industry. Wholesale unemployment, with the abandonment of homes, public buildings, business premises and the ancillary apparatus

of an organized community, is, in these days, tragic to contemplate: but even if disruption were ultimately unavoidable the process must now be graduated. It may be urged that in these extractive industries from the beginning the parties see a limited working life ahead of them; that the risks involved are patent and that all concerned should be held to their natural consequences. But this depends on various immediate and remote factors. Circumstances of the period of development, the quantity of the material available, the general practices and experience in the particular species of resources: these and other considerations qualify any absolute assumption of this nature. Although it may be lost, capital is an item which is deliberately risked to unknown factors and its recovery is specifically contemplated and more or less achieved in the items of depreciation and depletion. Consistently with that, the expenditure of the years of workers, so far as it can be expressed in economic terms, should, equally and logically, be provided for, a principle recognized by the provision of pension reserves. When the conditions are such that indefiniteness in time, reaching virtually to permanence, is attributed to the working of such resources, the element of temporariness disappears and the foundations laid are as if for good. Consistently with this view, the Dominion Coal Company has for many years administered a voluntary pension scheme, the annual payments for which now approximate \$1,300,000.

One aspect of community disruption should be elaborated. Nothing has been found to be more difficult than to attempt a large-scale uprooting of long-settled home life. Younger men may heed the call of distant scenes, and are adaptable to new surroundings; and in communities where family roots are not deep, movement and change are normal. The experience in Britain and in Europe generally, however, has led, if it has not been compelled, to the policy of bringing new work to the community or within its practicable working range. The negative results that have followed the Springhill disaster are a striking exemplification of this psychological and social fact. But how can it be looked upon as expectable to see men of all ranks easily abandon the slow and modest accumulations of years? How can they contemplate the disappearance of all those values and, with nothing but a past experience, set out to re-establish themselves within the rigidities of settled interests and relations? Not easily, certainly. In a country of the reputed wealth of Canada can we tolerate the presence, as a normal fixture of our industrial life, of the conditions now publicly described as existing in parts of West Virginia? Idle miners in Springhill are awaiting work there; the merchants, professional men and skilled and unskilled workers alike, are awaiting and hoping. But in all departments of life, the assumption of a certain degree of risk is inevitable and it is not at all clear that in this instance that has been sufficiently faced.

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It is scarcely arguable, assuming that society may be under an obligation to furnish opportunity to work, that the individual worker is entitled to dictate the place, kind and terms of work: the beneficiary of social decency as a principle of action, is primarily obligated to make the fullest effort of which he is capable toward adjustment in situations for which the underlying and operating forces of our civilization are alone responsible. We see the mode of settling such questions under a different form of government; workers are told what they are to do and where, and that is the end of it. Steadily permeating our society, however, is the conception of reasonableness, and it is as appropriate to the socio-economic field as to the political. It may be considered fanciful to suggest the infection of modern competitive industry by an ethical element, but such a view may not be so confidently held in, say, 25 years. Ultimately the arbitrament of reason in the engagements between groups in society must prevail; arbitrary dictation will not be accepted whether attempted by so-called "capital" or "labour", nor between government and individual. In this interim difficulty of an industry, then, we cannot do better than attempt to apply a rule which can be brought empirically within general application.

In prescribing the second or social aid I shall begin with Nova Scotia. The Social subsidy limited as to quantity as for the Basic subsidy, will be limited as to maximum to the amount earnable if all the coal were sold within the natural market of the Atlantic Provinces and Eastern Quebec south of the St. Lawrence River and east of the City of Levis. Within the same limits alternative markets in the remaining districts of Quebec and in Ontario will be available at fixed rates of subsidy for disposing, if necessary, of part of the allowable production. For the Dominion Coal Company and its associated companies the limit of subsidy payable will be the amount actually paid out in respect of subventions during the fiscal year 1959-60. For smaller producers such a limitation would fail to serve the purpose in mind and as their production is relatively small, the difference in treatment becomes unimportant.

The main object is to assist coal production to a better competitive position in its own market. In that the carriage charges are such that a greater unit profit should result than on remote marketing; and except where the absolute limits of local consumption are reached, to send fuel, at the general government's expense, a thousand miles for consumption for purposes which are present locally but are served by a foreign fuel, appears to be an ultimate in absurdity. The paramount objective is to ease the present straits, not to aggravate them.

So far the state of the industry in the Sydney district has been canvassed; but on the mainland of the Province what was once a coal centre of size, supplying coal of high grade seems now, for the time being at least, to be

approaching its end. Here the communities of New Glasgow, Stellarton, Westville and Thorburn formerly flourished, with their coal meeting most of the needs of the Maritime market for fuel, including the requirements of the railways. Through exhaustion of seams, disasters from fire and economic burdens, the industry has been reduced to one medium-size and two minor operations: the first by the Acadia Coal Company Limited, the McBean Mine; the other two by private companies called Drummond Coal Company Limited (Nos. 1 and 2) and Greenwood Coal Company Limited (No. 2), the production of which has been reduced to operations of three days a week with low output. The McBean Mine is estimated to have an economically mineable reserve of 2,830,000 tons, but its cost is such that it suffers the same difficulties as afflict mining in Cape Breton.

The plight of Westville is extreme. A well-built community which for over 60 years enjoyed a productive life of vigor, with its physical structure intact, is now dependent on the earnings of 50 or 60 miners engaged in the general area, some pensioners and a small number of persons with private means sufficient for modest living. Its council could do no more than recite the dreary account of their condition and exemplify their extremity by pointing the fact that within its bounds were 50 miles of paved streets for which the taxpayers were, by law, responsible. Unable to meet obligations of school debentures, they had already been forced to seek provincial assistance.

Stellarton is somewhat better, and New Glasgow is supported by a diversity of industry including steel and allied enterprises. The surrounding agricultural activities are on a minor scale. The simple fact is that in the wider community sufficient wealth is neither being created nor received to maintain the desirable level of municipal services. It can only be suggested, and it is done with diffidence, that the Province consider uniting these contiguous communities for limited purposes whereby some of the public functions can be centralized and in some measure the effects of a common hardship can be borne more equitably by all those who, largely in common, enjoy the accommodations or their effects today as they have done in the past. Municipal adversity is a provincial concern and the difficulties here must be dealt with by that government, but there are considerations justifying the taking into account by the Dominion, in its provincial allowances, of special limiting features of the Eastern provinces. With some such form of local co-operative action there could be a lessening of local rivalries, as, for example, in competition for new industries, and that should be the direction of future action. Already one small but promising enterprise has been established in Stellarton; and when others are offered, to place them in the best locations for their own purposes but to regard them as sources of wealth for the larger community would seem to be only good sense.

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Finally, there is the town of Springhill. Here, also, is a municipal problem: there is no guarantee that the proposed new coal operation will be successful and it is quite out of the question to give assistance to markets beyond the Atlantic Provinces. The only justification for extending the subsidies to this case, provided it meets all conditions, would be that the new opening is properly to be looked upon as a revival of operations closed in 1958.

In New Brunswick the substantial coal production lies within the Minto-Chipman area; a number of communities have become well established but the employment possibilities are as unpromising as in Cape Breton. In 1959-60 the amount of subventions paid was \$289,756.39 on a tonnage of 155,702.30. The total production was 995,991 tons, of which 819,252 tons were mined by the stripping method, and the balance 176,739 tons by underground workings. This Province, as already shown, has a limited future in reserves and the report of the New Brunswick Royal Commission of 1960 recommended a restriction of production of between 850,000 and 1,100,000 tons. By the present number of individual operations, as well as by the meagre seam thickness, stripping costs are higher than in the West. The limitations in quantity of production and the maximum of Social subsidy will be the same as those generally in Nova Scotia, regardless, for the same reason, of the amount of subvention previously paid.

For this assistance to Saskatchewan, Alberta and British Columbia a special situation exists. These provinces are the main sources of Canadian oil and gas in what are estimated to be large volume; and their provincial policies are set to exploit these resources to the utmost. It is these new fuels which are now responsible in greatest measure for the difficulties of their own coal reserves; what has been effected is a substitution of industry in fuels and it is to the substituted agencies that the provincial industrial economy has become geared. Although a limited use of United States fuel oil in British Columbia and Alberta by the railways was made some years before 1949, it has been the utilization and application of the diesel principle to locomotives within the past twelve years that has driven coal completely out of locomotive consumption; and the coincidence of this with the discoveries of Canadian oil undoubtedly hastened that conversion. In this situation, should the Dominion then undertake to succour, in the interests of possible minor social dislocations, a provincial resource the difficulties of which are the direct and foreseen results of provincial action? I can see no warrant for any such action, it would be a gratuitous interference with provincial industrial expansion and policy, exhibiting a solicitude unasked for. The provinces did not seriously urge any such assistance; Alberta emphasized greater research, an objective which that Province is pursuing in close collaboration with the Dominion. The local governments view coal as they do oil or any

other fuel; its position must be left to its inherent strength, and if that is not sufficient to enable it to continue competitively, then it must go the way of all weaklings and yield to its competitors. In Alberta aid is provided to enable displaced miners to move to new locations of employment; subject to that, the industry is treated in the ordinary manner and left, to sink or swim, to its own means of survival. This should be added. These provinces are rich in resources and are rapidly becoming industrialized. In addition to oil, gas and coal, there are basic activities, agriculture, ranching, fisheries, horticulture, lumbering, hard rock mining. These, with their train of generated industries, furnish such alternative occupations that the troubles of at least labour and community from a single industry are readily absorbed in the vigour of others. Unemployment, chiefly in British Columbia, may be present, but that must take into account the large increase in population since the end of the war, of persons seeking livelihood in an inviting and salubrious climate.

Should these provinces, for reasons deemed to justify a social subsidy, enter upon a policy of assistance of the nature proposed here, the Dominion might consider whether it should co-operate. In some degree assistance of this nature may intercept obligations toward unemployment; and in special circumstances it may be justified for that purpose.

With a local interest in coal one would think that provinces seeking Dominion action in aid would at least do their part in the use of their own coal for their own purposes, such as power, or large space heating, but such a course is not always taken. The Dominion government has long and consistently pursued the policy of using Canadian coal, (854,000 tons in 1959-60), when its cost is within reasonable limits of other fuels, and its benefits have been very considerable. That the provinces should follow a similar policy seems obvious except when they act on the view that the coal industry must succeed competitively or disappear.

Local governments are, of course, free to authorize new workings of Crown resources as they please: but that in these days new production, except in the special situations mentioned, should be permitted, much less encouraged, strikes me as unfortunate. It may be that in some instances new mines could, on a small scale, bring somewhat cheaper coal on the market; but it would be most likely to displace not competing fuels but other coal; and it would mean, at best, only a shifting of local difficulties. Assistance, in my opinion, should be confined to existing operations unless, beyond doubt, new production, serving special labour exigencies, will carry itself without disturbing the present competitive balance.

These subsidy proposals are to be subject to additional conditions here generalized. Subsidy of either type will not be available to any operation which was not carried on throughout the fiscal year 1958-59 and has not

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continued so up to the date of this report; no Social subsidy will be payable on coal exported; if the production in any year exceeds the limit fixed, the Dominion Coal Board may reduce the rate of or maximum quantity available for either subsidy otherwise payable for that year; up to one-third of the net profit in any year of any operator in respect of coal operations only, including an allowance for depreciation but excluding depletion and lost capital, and including in income the subsidy received, shall be returnable to the Dominion government to the extent of subsidy receivable for that year. Subsidy is to be viewed as a conditional loan repayable only out of a fraction of the profits in the same year realized. The present provision in the Orders in Council for cases of substituted operations will continue to apply.

The production and marketing of the Dominion Coal Company, and its associated companies, will, for subsidy purposes, over the next 10 years, be reduced to not more than three million tons, and the closure of mines has already been dealt with. The subsidies are accorded to that Company on the assumption that every reasonable measure of economy will be taken to bring production costs within tolerable levels. By various modes of concentrating production, lost time through shutdown and from absenteeism should be reduced to a minimum, the importance of which appears in the cost records which show convincingly the effect of work stoppages. The outlay for subsidies must be reduced and only through joint efforts and maximum efficiency can the social purposes in any degree be achieved. By reaching a level of output which, with reasonable effort and minimum assistance, can remain the core of support for the district of Sydney during an indefinite future, the best interests of all will be served. Efficient mechanization must be a matter of constant concern; and systematic management, running through the entire undertaking is a requisite for an operating improvement.

If and when opening of the Lingan area is decided upon for which capital funds will be required and advances are made by the Dominion government their return should be secured by a first charge on the production at such a rate per ton as will ensure the repayment at such a date as is clearly within the assured future life of the operation. Interest, if charged at all, should be at a minimum rate. Seeing the nature of the assistance being given, generally, and the insignificant effect of interest, the encouraging influence of operating at a profit regardless of size is ultimately worth more to the end result than such an item of bookkeeping.

To promote the attainment of this efficiency a further suggestion seems to be called for. Mining conditions in Britain match those in Cape Breton much more nearly than do those in the United States, and the experience gained there should be made more familiar to those directing work at Sydney.

For example, considerable use has been made of the Dosco Miner in the British industry; with modifications, it has proved for certain mining conditions a reasonably satisfactory machine. Nevertheless, other types have been developed which, especially in seams under 4 feet 9 inches in thickness, have shown remarkable performances. The best work of the Dosco Miner is in the thicker seams where a high percentage of fine coal is not particularly objectionable. Steps in Britain are now under way by modification to accommodate some mechanical mining machines of their own design to the thicker seam operations and the Dosco Miner performance is being pressed in terms of initial cost, flexibility, maintenance, operating efficiency and large production.

I suggest, therefore, that without delay a group of say five, two representatives of the Dominion Coal Company, two representing labour and one the Dominion government, make an inspection tour of mining operations in Britain, France, Belgium and West Germany. In those countries they will see what the best engineering and mining skills of Europe, in these days of keenest competition, have been able to do to lower operational costs. From the information gained, the management at Sydney should be able to work out improvements to produce the maximum economies possible there. As a representative of the Government, I would suggest that he be drawn from the Department of Mines and Technical Surveys, which has had long experience in all aspects of the coal industry. It would, I think, be a further desirability that next year, Mr. Sheppard be invited to make a confirmatory inspection and report on the Nova Scotia mines. The justification for this lies in the wide variety of mining conditions met in Britain and the continental countries and the training and competence of this particular official.

Objections to such a recommendation are more than answered by the actualities of the Sydney situation. The Dominion government is involved in an exceptional policy in respect of which it is entitled to see that private industry is doing its part in the general effort. So far as my information goes, no other government in the western world is rendering coal a comparable support, and it is being given to avoid a relatively small, though expensive, social disturbance, a disturbance which is primarily a matter of local government responsibility. A production of five million tons a year at Sydney cannot be permitted, even with present subsidies, simply because the purchasing market is not available; and within 10 years, as already remarked, not more, in my opinion, than three millions could without higher subventions, be disposed of. I venture this opinion subject, of course, to the possible development of nuclear energy. In any case of mine abandonment, the reasons calling for it including the production costs should be made public. It would seem that, as in some large undertakings, the monthly costs of each mine could well

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be made known to the employees; certainly if there is to be any appeal to self-interest, they should be told what is happening and working results high or low, exhibited to those responsible for them.

Wages may enter into the general picture. With the Company's operations continuing only through government help, it must be realized and acted upon that the employees and their communities are the real beneficiaries of the enabling assistance given to operations which, in an economic-industrial sense, are not at this time essential to Canada. So far as these conclusions go, there will be available to the Company for capital or other improvements and operating charges two-thirds of whatever net profit may result. The higher this is made the greater the probability that part of it will be available to labour. But it should be realized by everyone, workers and public, that the limit of government assistance has been reached, and by demands that cannot be met, the magnitude of present operations might have to be radically reduced. On this I will venture one more remark: drastic action by the Union will have the worst possible effect. These mines, as already observed, if in the United States, would have been closed, at least in their major part, years ago; the Dominion government has become a "liability-only" partner for their continuance, a relation unknown to the coal industry of the Republic.

As relevant to the situation, from time to time, of the future, which we must try to envisage and prepare for, I think it appropriate to add the following. At the hearing in Toronto Dr. C. J. Potter spoke on behalf of the National Coal Association of the United States. Dr. Potter is extremely competent in all coal matters and his submission was thorough and well presented. The acceptance of it was in accordance with existing practice between countries exemplified frequently by national representations when tariff changes are proposed. He emphasized the broader energy exchange between the two countries as well as the substantial investments at Canadian lake ports in coal facilities.

What I desire to make clear is that he represented, indirectly, the interests of the working force in the United States; and his contentions which, on the assumptions of private enterprise, are logical and irresistible, and which, as between Canada and the United States, at least in coal, deal with a partial internationalism, were designed to keep that force at work as well as to preserve invested values of United States operators. The briefs submitted on behalf of the United Mine Workers of America were expressive of views suggested, if not edited, by high officers of that organization. I do not refer to this by way of criticism but merely as fact. But the policy advocated by the United Mine Workers in Canada would in the United States be the rankest apostasy from the principle "invented" by the Union

leaders in that country. The relevancy of this is to possible future controversies between Canadian operators and men; when they arise they do so in a purely Canadian setting, in circumstances foreign to similar occasions in the United States; and in reaching solutions, it would be a serious disservice to Canadian labor and industrial interests if that basic difference were disregarded. Sooner or later we must come to a realization of these distinctive Canadian factors; and failure to do that in coal would jeopardize interests which it is the principal object of the recommendations of this report to preserve.

Toward matters such as wages, I should say that I decline to view the operators and men as combatants lined up against each other in battle array. Here the interests of the men are identical with those of the operators: both are dependent on the continued working of mines. The companies cannot look to more than a minimal profit, if any, and the men generally speaking will be within limits which only reduced costs and improved local markets can enlarge. Without governmental assistance only a mere fraction of the work, if in some cases any at all, could be carried on; and it is important to repeat that, except for metallurgical purposes, Canadian coal is not today a necessary fuel. In that situation the Canadian people are entitled to see relations between the two groups maintained consistently with these objectives, and that mutual confidence, reasonableness and frank facing of all conditions and difficulties mark the course of vindicating the continuance of the policy so long and so expensively followed.

Mine closures should, obviously, be carried out with the least loss of economically recoverable coal through tunnel connections with neighboring collieries or other measures, and with the least possible displacement of workers. I assume that the Union representatives will be consulted on all steps to be taken for such and other purposes envisaged by this report, including it is probably unnecessary to add, their counsel on the distribution between age classes of retained and released employees.

The scheme of subsidies proposed, allowing alternative markets to operators should tend not only to induce disposal in the nearest or natural market but to give the communities a breathing space to examine their position and in general to prepare to accept consequences nearer to ordinary competitive industry. It will tend also to give a degree of regulation to a functional distribution of coal, directing its benefits to uses for which it is best suited and leaving to other uses the premium fuels.

The two classes of subsidy are to be deemed a single grant; any monies payable or repayable to the Dominion government in respect of subsidy may be deducted from sums accruing at any time for subsidy. Repayable

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monies shall constitute by reason of the acceptance of any subsidy, a debt recoverable before the ordinary civil tribunals. But the recovery of subsidy to the extent of one-third of the net profit is simply an adjustment of the amount payable which, until the net profit appears, is uncertain: it is not the payment of a debt strictly; its recovery dates back to the original payment by way of reduction in amount.

At this point the obvious question arises, what after 10 years? In the dynamic of today's scientific and technological advances and the mastery of the elements and forces of nature extending to creative manipulation of them, it would be somewhat of pretention to recommend the future taking of positive and specific action. Within 15 years it seems doubtful that nuclear energy will supersede coal for general fuel purposes but it may; the recent condensation and shipment of natural gas to distant markets already gives promise of further competition for both coal and oil; the intense prosecution of research in steelmaking looks to diminishing coal requirements; even the trapping of the direct energy of the sun is the subject of constant probing and experiment. The secrets of nature's ultimate processes are yielding to human understanding and their reasoned elaboration proceeds to a degree that makes the results look like a swift solution of a jigsaw puzzle. This does not diminish the danger of remote speculation.

What may be suggested is that beyond 10 or 15 years coal may be pushed still further into the background of fuels. It is because of that possibility that the need exists, especially in Cape Breton, to build up alternative means of productive wealth; and the necessity also of facing up to such a possibility as well as the planning for the minimum disruption in the substitution. It is to try to avoid severe dislocation even within 10 years that the recommendations provide for graduated action. At the end of that time, if no major changes in circumstances have already occurred, the situation must be reviewed and, depending on the success of alternatives, the general state of technology, and the part if any played by coal in holding down oil and gas rates, new measures may be necessary, contemplating, over a period of an additional 10 or 15 years, further reduction in the scale of mining in Cape Breton. This may not take place but it would be foolish to shut one's eyes to its possibility and even likelihood.

Large-scale production of coal in which fines will predominate will seek the markets of industry. This movement to the most appropriate uses will place the operators in the strongest position for a general heightening of efficiency. They will be able to concentrate on meeting the constantly increasing refinements of quality, sizing, uniformity, etc., demanded by industry, and at the same time follow a *de facto* allocation to uses functionally best suited for coal.

Report

The subvention now authorized on shipments to Japan does not lend itself to much analysis, but the facts as I have been able to glean them may be stated. Japan, as many other states, is forging ahead in the expansion of her steel industry: she possesses some coking coal but must import, and her heaviest purchases are from the United States and Australia. The latter country is currently endeavouring to conclude an arrangement to supply three million tons a year over an extended period.

For this year Alberta and British Columbia operators have been able to negotiate orders for approximately 500,000 tons, the supplying of which will be distributed between a number of them. On this the subvention payable is the maximum provided of \$4.50 a ton, which means a total of \$2,250,000. The coal is intended for blending purposes but the object of the present arrangement, at least in its economic aspect, is experimental and further shipments on the same basis of subvention are not contemplated. The subvention may be looked upon as a credit item in the total trade exchange with Japan in which Canadian exports exceed imports; but that such a support should be continued in regular trading does not appear to have any justification. There is no reference to ultimate profits of the operators by way of recoupment of any part of the subsidy: and the aid is given in the presence of an abstention, on economic grounds, from participation in the assistance by the provinces.

Mining operations which did not produce more than 50,000 tons in the fiscal year 1959-60 constitute a group which are best adapted to meet immediate community requirements and are to be excluded from any part of the Dominion subsidy. The interest is essentially local and the provincial governments are best fitted to deal with the special situations. The provinces, moreover, are primarily concerned with these activities and participation in their maintenance and regulation is overdue. Nova Scotia has recognized this by a substantial contribution toward the Dominion subventions. In addition, that Province has, in the case of a number of smaller mining ventures, by means of loans and other forms of financial aid, manifested the acceptance of the policy now suggested and the responsibility that accompanies it. Should the recommendations of this report be adopted, the annual contribution by that Province to the Dominion would cease and the money would be available for the local administration of the operations so excluded.

The principle of recoupment of excess subsidy is introduced both because it is foreign to the purpose of these subsidies to enable coal production to be normally profitable, and because of the uncertainty of the ultimate result in profit of their effect in tending to direct disposal in local markets. At the

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worst, it leaves the operator with two-thirds of his profit in many cases gained largely if not wholly through the effect of subsidy. The granting of this assistance, as national action, whether or not it is to be termed a national policy, represents a sensitive response to a social desideratum in keeping with the sane measures, however objectionably pragmatic they may appear, taken in other situations which have contributed powerfully to the national spirit and solidarity of the Dominion. No other practicable or tolerable method of dealing with the coal industry has been suggested; local government acquisition and administration could do nothing to improve matters, and the financial consequences would be beyond the capacities of the Eastern provinces to meet. The most ambitious scheme would be its inclusion in a complete regulation of energy. That would call for the allocation of zones or functional applications for the various fuels according to efficiencies in utilization or other standards; but it would, as well, raise difficult constitutional questions. The objection to such a regulation, that everyone is entitled to a "choice" of competing commodities, has become a parroted cry which is irrelevant when applied to a natural resource and in some cases has been disregarded in the regulation of public utilities. Carried out logically it means that an individual is entitled to use a particular resource in whatever manner or for whatever purpose he pleases and as he pleases. We haven't yet reached that degree of impotence in dealing with what through mere existence is both highly valuable to the nation and is of strictly limited quantity. In these remarks I do not, for a moment, intend to intrude upon the province of the National Energy Board: in the interests of the coal industry, I am simply expressing views which seem to indicate a mode of regulation that would be to the benefit of that industry and perhaps to the country as well. They are made only to support the claim of coal to a continued participation in the fuel functions of the Dominion.

On what I consider to be good advice on all types of possible coal utilization for chemical uses, gasification, hydrogenation or reduction into liquid hydrocarbons, highway paving material, electricity generation at the mine, and others, I can only conclude that none of them at this time, presents a practicable means of meeting any substantial part of the problem. Either because of saturated markets, prohibitive costs, or unproved feasibility they must, for the purpose here, be put aside.

Customs duties on coal and oil, sales taxes and quotas have been urged and I mention them only to show they have not been overlooked. As shown in Appendix M, coal from the United States, through its low production costs, is able to enter the Ontario market in commanding fashion; but what would higher duty do? It would, in fact, make no difference because United States coal in that market is struggling to meet, not Canadian coal, but Canadian gas and oil. The tendency of duties on raw materials generally

to increase costs for large-scale industrial export indicates the necessity of viewing the matter from a national standpoint. Export is of the first importance to all of Canada and since the benefit of free raw materials may leave a certain wreckage in its wake, in certain cases it is the general interest that should be charged with the repair and salvaging as part of the price of the benefit. There is moreover, the energy exchange between the two countries which, enabling the highest economical use to be made of all types, is beneficial to both. Western Canadian oil and gas in large quantities enter the United States as a boon to our means of meeting in part our payments on the huge investments made largely during the past five years. In the special circumstance the general benefit to the Dominion should recognize in subsidy the relatively modest claims for injurious affection to individual and local resource industry and establishment.

This attribution of prejudice by general action to special activities, as a basis for social adjustment, is illustrated strikingly in the fact that the complex of gas, oil and coal has been accentuated by the actions of the governments of the Dominion and Ontario in accelerating the construction of the gas pipeline from the prairies to Montreal. There is no doubt of the general benefit and advantage resulting from that assistance but that special detriment has resulted in equally beyond doubt. As already observed, but for the purpose of emphasis, if the introduction by government action or encouraging policy of new factors results directly and inevitably in the partial destruction of existing, and to that moment, of necessary economic and social values, the repair of that injury must, in special situations, be made a general charge. Private enterprise, in its doctrine, does not contemplate such action and its effect necessitates a new assessment of the situation created. To put it concretely, the building of a necessary link in a gas pipeline across Northern Ontario has made miners in Cape Breton and other sections idle for which compensating action should be taken. Although this consideration can easily be carried too far, and I confine it to the special circumstances before me, it cannot be refused any recognition whatever.

A short elaboration of that idea may be in order. Is such an irruption of new natural resources, uncontrolled and realizing its full impact and consequence, an ultimate benefit to the economy as a whole? Which should bear the loss of interim superseded capacity, the industry that has run wild in the urgency of immediate exploitation, or the existing industry acting within legitimate functions? If such a gusty windfall is to be taken as a normal feature of resource industry, to be left to its inevitable social effects until, after an interim period, the resource becomes again industrially and socially necessary, some counterbalancing action on the entire economy, to preserve in some degree existing structures, would seem to be inescapable. That is the nature of what is proposed.

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The levy, special in its circumstances, becomes itself a feature of that particular species of industrial transformation. It is of no force to object to it on the score of interference with the "natural workings" of private enterprise; the latter has become the beneficiary of special governmental action injurious to others. These "workings" have moreover been under constant modification ever since their origin in *laissez faire*. It may be that the object of industrial economy, the importance of which is unchallengeable, is to subserve the social establishment and not the converse; and the course of empirical adjustment in minor features to protect what corresponds to the individual politically, seems to be the most acceptable means of meeting these transitional occasions, the limits of which have already been examined.

World-wide industrialization is producing a struggle for markets that is exacting, as a simple necessity, ever-pressing research, a constantly advancing technology and the elimination of every scrap of waste or non-utilization. To that pressure coal, on all fronts, is exposed and only by the utmost efforts of all concerned can its existing participation in the supply of energy required by the nation be maintained. Canada is fortunate in having a mineral research organization of most competent scientists and technologists. Its means, however, seem to have been too far restricted to enable it to meet all the pressing problems; and to accomplish what it is capable of doing for the coal industry, additional funds must be forthcoming. It is not necessary that this research should duplicate that of other nations with which our representatives are fully acquainted; there are special Canadian problems which must be solved on Canadian soil. In this connection, the contributions to coal research by Alberta and Nova Scotia, with expenditures of approximately one million dollars and two hundred thousand dollars since 1921 and 1947 respectively, have been commendable.

The payment of subsidy will continue to be conditional on the fullest discovery and disclosure of all books, records and accounts of every description, and on such audit with all its ordinary or necessary examination by the Dominion Coal Board's representatives as may be deemed proper.

So far this report has dealt with direct and positive means of sustaining operations of the industry; but a complementary and even more important aspect remains to be examined. A single extractive industry, by its nature, is not a desirable economic base for a community and in coal there are incidental accompaniments that render it more undesirable than others. For the Sydney-Glace Bay-Louisburg district, alternative and supporting economic and cultural activities must be considered, a scheme adequate to introduce new wealth into Cape Breton and bring fresh and heightened scenes and an elevation of mind and spirit to its people. In this we should turn first to its

natural and historical endowment as the source of new interests and incidental material benefits, and undoubtedly there are resources of this nature fit for full exploitation.

The Island, without excessive cost, can be so exhibited and revealed as to bring to its people that new outlook and spirit, as well as economic betterment. Contemplation of its natural beauty of coast line, lake and mountain, enhanced by the intrusions of ruggedness, brings not only immediate enjoyment but as well those intimations of "old, unhappy, far-off things" for which the plaintive numbers of the highland girl flowed; the scenes which entranced that great man, Graham Bell, with their cool, refreshing, simplicities; from which come the subtle strains unheard that found expression in the eloquence of one of Nova Scotia's most deeply native sons, the late Angus L. Macdonald. These are the ineffaceables of that land, the permanent imprints of nature, awaiting only experience of them by men and women.

Equally impressive with the munificence of nature are the historical relics of man's works. Mouldering on the southeastern coast of the island is a mute reminder of the wastage of time. Here is the scene of one of the striking events in the historical course of things that has led to the Canada of today. In the early part of the 18th century began the work of building the strongest fortification then existing on the Atlantic Coast of North America and of establishing a community bringing to the New World the architecture, traditions and culture of the French people at the direction of the most polished court of continental Europe. As a revelation of European life of that century and a remainder of the vicissitudes of North America's development, what could be more stimulating to the imagination or instructive to the mind, not only for the people of Cape Breton and Nova Scotia, but of Canada and the Eastern portion of the United States, than to look upon a symbolic reconstruction of the Fortress of Louisbourg. Not that each item in the total scene should appear but sufficient to furnish a comprehensive representation of the material and cultural forms set up in a strange land inviting settlement. That site marks a salient occasion in the transplantation of a civilization significant to the history of Canada; and to allow it to sink into ruin and obliteration would be a grave loss to the civilizing interests of this country. To give the reconstruction the fullest exposure, a highway from Louisburg to Point Tupper should be built enabling the entire Island to meet the desires of tourists; and to accommodate those to whom time is more important, additional modern airfield facilities should be made available.

These Island possessions are spiritual resources with the power of inexhaustible satisfactions, of multiplying opulence, which can never be taken

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from it: but they would be accompanied by associated means of furnishing the ordinary pleasures and enjoyment of more earthy quality. Around the eastern shores of Gabarus Bay was formerly the scene of sword-fishing, which with other varieties of fishing sport await only gear and patrons. The existing Cape Breton Highlands National Park lends itself to a far greater exploitation of its charms and sources of entertainment: wild life sanctuaries could not have a more fitting locale; aquaria could exhibit the wealth of the Eastern sea; and what could be done to unfold to those seeking new forms of nature's profusion and of man's inventions is exemplified by the Alexander Graham Bell Museum at Baddeck, a masterpiece of scientific appreciation and artistry, of which a finer tribute to human genius would be difficult to conceive. With planned and substantial expenditures of between one and two million dollars to be saved ultimately if not from the beginning from coal subsidies, over a period from 15 to 20 years, the Island could be made the western heath of the Scottish people: from many parts of North America and to a lesser extent, from Scotland, would come not only men and women seeking pleasant scenes and enjoyable pursuits, but haunted by intimations of ancient northern music, there to catch fleeting recognitions of voices of ages past, sought and welcomed as a relief from the weight and humdrum of ordinary existence. It is a unique land, a fit place for such a national purpose.

Here are resources of profundity as well as of enjoyment; the scenes are a national property to be brought to an attainment of their potentialities. What is proposed will be not only of economic benefit to the Island; it will introduce elements to regenerate its life and outlook, dissolve the climate of drabness and let into human hearts and intelligence the light of new interests, hopes and ambitions. Mechanical industry remains uncertain, but there are pursuits of deeper purpose lying within the will and action of people and governments.

That is not to say that the efforts to attract more industry to the Island should, in the slightest degree, be lessened: they are an immediate urgency. To this end, the youth of the Island must be provided the means to become skilled in the techniques of today: a vocational school and a trade school are essential to any invigoration of its life. For too long has the Island been put down as a bleak mining region condemned to an existence of conflict between men and management. Lying at the extreme east of the country, its remoteness has probably added strength to that general attitude and to have intensified the local contraction. It is time to bring an end to both and to infuse a sense of deeper participation in the life of the Dominion. This means a planned future: to bring opportunity to its vigorous stock and to see their sons and daughters expand their roles throughout the land. For this

intensified education both governments should assume financial responsibility. The justification for that on the part of the Dominion lies in its concern with all sectors of the Canadian social body.

With the gradual reduction in the amount of subsidy to the coal industry, and the contemporaneous measures for introducing alternative sources of wealth, the ultimate end of coal mining, remote or near however it may be, will be met without shock and the Island life will proceed on a firmer base leading to a richer experience. That this transformation may be projected to 20 or 30 years gives no leave to postpone any further the steps that are so essential now to the accomplishment of that future.

Besides new industry, in forestry and animal husbandry the Island has further means of expanding its economic base; and although these are limited in possibilities, the departments of the provincial government administering them are most capable. So far as these features may be able to contribute, they will undoubtedly play a part toward the accomplishment which this report contemplates.

As indicated in Mr. Sheppard's report, capital expenditure may, from time to time, become necessary; the matter may be presented at an early date in relation to a new washing plant, possibly new screening apparatus, new mine cars, motive power and other items of equipment. So far as government assistance may be involved, loans should be made only when secured by a term of operation sufficient to enable the expenditure to be recovered. This will require a realistic view of all factors and the courage to act in a manner calculated to produce the greatest ultimate benefit to Cape Breton at the least expense to the Dominion. It means, above all, a policy rigidly adhered to.

Coal shipped via Louisburg is carried over the Sydney and Louisburg Railway a distance of 39.2 miles, at the rate of \$1.08 a ton. Although switching takes place at both terminals, that charge appears to be much beyond what it should be and the Board of Transport Commissioners should be requested to fix a rate for the future.

The Commission has urged the Dominion Coal Company to open negotiations with the Canadian National Railways exploring the possibility of an Agreed Charge to cover all or the greater part of coal shipped to Quebec and Ontario points. Apart from the question of lower cost, rail carriage would tend to reduce degradation in size suffered through the several handlings in water carriage. The exclusive use of the Railway under such an arrangement would benefit the latter as well as the Company and I would be at a loss to understand reluctance to enter upon serious consideration of such a convention. The Railway, freed of trammels formerly existing, is in a position

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to afford such incidental accommodation as may be necessary to maintain existing and required modes and times of delivery; and relief from the maintenance of extensive water facilities in Montreal and at other ports could not but be of advantage to the Company. In this period of unrestricted action by the competitors of coal, it means only the generation of a few ideas to produce relations of benefit to both each of which, in different respects, is a victim of it. Consideration of the scope of the arrangement could be extended to embrace total shipments of coal by the Company, the only obstacle to which seems to be that such a thing has never been done before.

The functions of the Dominion Coal Board as proposed in this report will require, in my opinion, a change in its membership. Seemingly at its inception, in view of its functions, it was felt desirable to have operators and labour directly represented by members engaged in coal mining or acting for operators, and a similarly placed labour representative. But with the new functions, the members should, as a matter of principle, be free from any such relationship. The membership should, in my opinion, be reduced to five, none of whom should directly or indirectly have personal interest or hold office in any sector of the coal industry. This does not exclude persons who were formerly employed in the industry or associated with it. That coal operators and labour representatives, as advisory committees or individually, may present their views on any pertinent matters is clear for which adequate provision is made in the present Act; but it would be incompatible with the proper functioning of such a body that a member should be placed in a position either to advance his own interest or to affect adversely the interest of a competitor.

The recommendations of subsidy which follow are intended to be in substitution for the existing subventions provided by the Orders in Council set forth in Appendix K; they are to be taken as leaving all other aids or benefits unaffected to the same degree as do those subventions.

RECOMMENDATIONS

SUBJECT to the conditions set forth below, or otherwise contained in this report, the following measures to be taken by the Dominion are recommended:

1. Two classes of subsidy on coal, denominated Basic and Social, will be provided on the following terms:

(a) On all bituminous coal produced yearly in Nova Scotia by eligible operators, there shall be payable a Basic subsidy of 50 cents a ton; in addition, a Social subsidy of \$2.00 a ton will be payable on all sales for consumption in the Atlantic Provinces and in that section of Quebec south of the St. Lawrence River from Gaspé Peninsula to Levis, called Eastern Quebec; on sales made in Quebec within the area to which, under the present subventions, shipments from Nova Scotia receive a reduction of 35% in the rail freight rate, a Social subsidy of \$4.00 a ton; and to all other points in Quebec and Ontario a Social subsidy of \$5.00 a ton.

(b) On all bituminous coal produced in New Brunswick by eligible operators there shall be payable a Basic subsidy of 40 cents a ton on coal mined underground and of 30 cents a ton on coal mined by the stripping method; in addition, a Social subsidy of 60 cents a ton for all coal mined underground and of 40 cents a ton for all coal strip mined sold for consumption within the Atlantic Provinces and Eastern Quebec; for sales of both underground and strip mined coal to points in the 45% area of the present subventions applicable to New Brunswick, \$1.35 a ton; and to points in the 55% and 70% areas, \$2.70 a ton.

(c) On all bituminous and sub-bituminous coal and lignite produced by eligible operators in Saskatchewan, Alberta and British Columbia: for all mined underground, a Basic subsidy of 40 cents a ton; and for all strip mined, a Basic subsidy of 30 cents a ton. For the reasons stated, no Social subsidy shall be payable on coal or lignite mined in these provinces.

2. No subsidy shall be payable on coal from a mine which was not in operation throughout the fiscal year (Dominion) 1958-59 and has continued operations to the date of this report. To this, however, the provision in the existing Regulations, Appendix K, enabling substituted mines to qualify for subvention, shall apply.

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3. No subsidy shall be payable in respect of the production of an operation which during the fiscal year (Dominion) 1959-60 did not produce more than 50,000 tons.

4. The maximum tonnage produced by an eligible operator during any year of the three fiscal years (Dominion) 1957-58, 1958-59, and 1959-60 shall be the maximum quantity on which subsidy shall be payable.

5. The total subsidy which can be earned by the Dominion Coal Company and its associated companies shall not exceed the amount paid out in respect of subventions during the fiscal year (Dominion) 1959-60.

6. The total subsidy which can be earned by any other operator in Nova Scotia and New Brunswick, shall be the amount which the permissible production for subsidy purposes would earn were all the production sold within the Atlantic Provinces and Eastern Quebec.

7. No subsidy shall be payable on coal mined in an operation carried on for the primary use of the owner as distinguished from the primary purpose of commercial sale and even though sales are made incidentally to the former use; and this shall apply regardless of the person or company or instrumentality by which the mining may be carried on or on what terms or whether the title to mine the coal is in the name of the owner or anyone in the capacity of agent or trustee for the owner.

8. Of the net profits of a coal operation receiving subsidy in any fiscal year, one-third of those attributable only to the production, distribution and sale of coal shall be recoupable to the Dominion to the extent of subsidy received during that year. In the ascertainment of net profit, depreciation shall be allowed, but neither a depletion allowance nor any capital loss shall be taken into account and the total subsidy received shall be taken to be income.

9. Should production by any operator in any year exceed the quantity specified as available for subsidy, the Dominion Coal Board may, in view of all the circumstances, determine whether for that or any future year's production the Basic or the Social subsidy should be reduced and to what extent. The Board may subsequently restore the amount of subsidy in either class for future production within the specified limits and no previous action of the Board shall prevent subsequent action of either kind; but in no case shall the specific amounts of subsidy provided be exceeded. The Board may, in such circumstances, in addition to the foregoing or independently of it, similarly reduce the quantity of production of any operation on which subsidy will be payable and may subsequently restore in whole or part the reduction made.

Recommendations

10. The provision of subsidy shall continue for 10 years. Within that time the production of DOSCO available for subsidy, graduated to the satisfaction of the Dominion Coal Board, shall be reduced to not more than three million tons.

11. No Social subsidy shall be payable on coal exported from Canada; the present subventions on coal exported to Japan should not be continued on the present basis, and continued assistance by the Dominion, if considered advisable, should be by way of co-operative action with the provinces of Alberta and British Columbia.

12. That the Dominion Coal Board be reorganized by reducing its membership to five persons none of whom shall be an officer or employee of or otherwise associated with any sector of the coal industry. The jurisdiction of the Board shall extend to the interpretation of all provisions relating to subsidy, and to the determination of any fact in any manner affecting subsidy or the eligibility of any operator for subsidy or in any other manner whatsoever affecting the administration of subsidy: and its decision or finding in any case shall be final and conclusive.

13. That beginning not later than in the year 1961 work on a scheme of reconstructing the ruins of the Fortress of Louisbourg as an historic site be commenced and that it be carried through to an appropriate completion; that assistance be given to the Government of Nova Scotia in completing a modern highway between Louisburg and Point Tupper as incidental to the reconstruction of the site; that at the same time measures be taken to exploit fully the attraction possibilities of the Cape Breton Highlands National Park; that both projects be planned in substantial dimensions to extend over a period of from 15 to 20 years, during each of which not less than approximately an expenditure of \$1,500,000 will be contemplated.

14. The long-term welfare of the industry and its increased self-reliance must be based not only on subsidies but on technical factors both in production and utilization, practical proposals for improvement in which require time for study and execution. The mining study featured in the report is aimed at the reduction of production costs. Concurrently, utilization studies including consideration of the relationship of coal with other fuels, particularly for bulk use in combustion and metallurgy, should be undertaken in order to provide useful information as soon as possible. For these tasks additional funds to the Department of Mines and Technical Surveys are imperative.

Research generally should be expanded in collaboration with provincial agencies and universities to which reasonable grants should be made for supporting investigations of scientific and engineering character, and to

Royal Commission on Coal

provide opportunities for graduate training of coal technologists. The Department of Mines and Technical Surveys, as the Dominion agency, can best provide the broad scientific and technological knowledge, with concentration of maximum joint effort on the speedy solution of problems that are special to particular regions.

15. That, in co-operation with the Provincial government, steps be taken without delay and assistance be given for the establishment of a Trade School and a Vocational School within the Sydney district.

16. That without delay a group of five persons, two representing the Dominion Coal Company, two representing the mine working force of that Company, and an engineer representing the Dominion government, make an inspection of coal mining operations and incidental activities in Britain, France, Belgium and West Germany with the object of enabling the Company to avail itself of the latest means of obtaining economic efficiency in its operations. As the representative of the Dominion government, the appointment is suggested of a member of the staff of the Department of Mines and Technical Surveys. Should the government of the province desire it, the group should include its representative. A subsequent inspection of the operations of the Company should, in 1961, be made for which Mr. Sheppard would appear to be the desirable person.

All of which is respectfully submitted.



The Commissioner

Dated at Ottawa this 31st day of August, 1960.

APPENDICES

APPENDIX A

THE ORDERS IN COUNCIL

P.C. 1959-1293

Certified to be a true copy of a Minute of a Meeting of the Committee of the Privy Council, approved by His Excellency the Governor General on the 6th October, 1959.

The Committee of the Privy Council, on the recommendation of The Right Honourable John George Diefenbaker, the Prime Minister, advise that The Honourable Ivan Cleveland Rand be appointed a Commissioner under Part I of the Inquiries Act to enquire into and make recommendations concerning:

- (a) the present and future markets for coal as a source of energy and for other purposes in the various regions of Canada;
- (b) the steps that can reasonably be taken to reduce the cost of production of coal in the various coal producing areas of Canada and the costs of its distribution to Canadian markets;
- (c) the steps that the Canadian coal producing industry can take to secure as large a market as possible for Canadian coal and to place and maintain the industry on an economic basis;
- (d) the measures that can reasonably be adopted by governments to support the economic production, distribution and sale of Canadian coal; and
- (e) such other related matters as the Commission considers appropriate in reporting on those specified above.

The Committee further advise:

1. That the Commissioner be authorized to exercise all the powers conferred upon him by section 11 of the Inquiries Act;
2. That the Commissioner adopt such procedure and methods as he may from time to time deem expedient for the proper conduct of the inquiry and sit at such times and at such places as he may decide from time to time;

Royal Commission on Coal

3. That the Commissioner be authorized to engage the services of such counsel, staff and technical advisers as he may require at rates of remuneration and reimbursement approved by the Treasury Board; and

4. That the Commissioner report to the Governor in Council with all reasonable despatch.

(Sgd.) R. B. BRYCE

Clerk of the Privy Council.

P. C. 1959-1547

AT THE GOVERNMENT HOUSE AT OTTAWA

FRIDAY, the 4th day of DECEMBER, 1959.

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council is pleased hereby to appoint W. Keith Buck, Esquire, Chief, Mineral Resources Division, Department of Mines and Technical Surveys, to be Secretary to the Commission appointed by Order in Council of the 6th October, 1959 (P.C. 1959-1293) to inquire into the present and future markets for coal as a source of energy.

Certified to be a true copy.

(Sgd.) R. B. BRYCE

Clerk of the Privy Council.

APPENDIX B

THE COMMISSIONER

THE HONOURABLE I. C. RAND, Q.C.

COMMISSION STAFF

Secretary

W. KEITH BUCK

Administrative Officer

JOHN J. ELLIS

Research Statistician

IAN B. BROWNE

ADVISERS

Technical Adviser: A. E. CAMERON, D.Sc., LL.D., D.Eng.,
Cameron & Cameron, Halifax, N.S.

Special Adviser: W. V. SHEPPARD, Director-General of
Reconstruction, National Coal Board,
London, England.

Labour Adviser: H. R. PETTIGROVE, Department of Labour,
Government of Canada, Fredericton, N.B.

Legal Counsel: W. A. D. GUNN, Q.C., Gunn & Gunn,
Sydney, N.S.

APPENDIX C

HEARINGS

The Commission held public hearings in 8 cities in all coal-producing provinces and the two major coal-consuming provinces in Canada during 1960. During the 12 days of hearings, the Commission received 58 submissions. The locations and dates of the public hearings were:

Regina, Saskatchewan	February 2, 1960
Montreal, Quebec	February 9, 1960
Toronto, Ontario	February 15, 16, 1960
Fredericton, New Brunswick	March 2, 1960
Halifax, Nova Scotia	March 11, 1960
Sydney, Nova Scotia	March 16, 17, 18, 1960
Calgary, Alberta	March 31, April 1, 1960
Victoria, British Columbia	April 19, 1960

APPENDIX D

MINE COMMUNITIES VISITED

During the course of public hearings in February, March and April, 1960, the Commission made personal visits in all coal-producing provinces to 31 communities which are socially and economically dependent, in whole or in part, on nearby coal mines. The Commission also visited coal docks in two major ports situated in the two large coal-consuming provinces. The localities visited and the dates of the visits were:

MINE COMMUNITIES

Saskatchewan

Estevan and area

(Estevan, Taylorton, Bienfait) February 3, 4, 1960

New Brunswick

Minto and area March 4, 1960

Nova Scotia

Joggins and area March 7, 1960

River Hebert and area March 7, 1960

Springhill March 8, 1960

Sydney and area

(Sydney, Glace Bay, Dominion,

New Waterford, North Sydney,

Sydney Mines, Florence, Donkin,

Cape Breton County) March 12-20, 1960

Inverness and area March 21, 22, 1960

New Glasgow and area

(New Glasgow, Stellarton,

Westville, Thorburn) March 22-24, 1960

Alberta

Canmore and area April 4, 1960

Drumheller and area April 5, 1960

Lethbridge and area April 6, 1960

Blairmore and area April 8, 1960

Coleman and area April 9, 1960

Wabamun and area April 12, 1960

Forestburg and area April 13, 1960

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British Columbia

Fernie and area	
(Fernie, Michel, Natal)	April 7, 8, 1960
Cumberland and area	April 20, 1960

COAL DOCKS VISITED

Montreal, Quebec	February 9, 1960
Toronto, Ontario	June 3, 1960

OTHER COMMUNITIES VISITED IN CONNECTION WITH THE ENQUIRY

Saint John, New Brunswick	March 3, 1960
Louisburg, Nova Scotia	March 13, 1960
Edmonton, Alberta	April 11, 1960

APPENDIX E

MINES, THERMAL POWER PLANTS AND OTHER FACILITIES VISITED

During February, March and April, 1960, the Commission made personal inspections of 34 mines located in all coal-producing provinces of Canada, toured 5 thermal power plants and visited 16 other facilities in connection with the enquiry. All these facilities are listed by company, location and date of visit.

COAL MINING OPERATIONS

<i>Company</i>	<i>Mine Location</i>	<i>Date of Visit</i>
Western Dominion Coal Mines, Ltd. ...	Taylorton, Sask.	Feb. 3, 4
Manitoba & Saskatchewan Coal Co. Ltd.	Bienfait, Sask.	Feb. 4
V. C. McMann Ltd.	Minto, N.B.	Mar. 4
Miramichi Lumber Co. Ltd.	Minto, N.B.	Mar. 4
Avon Coal Co. Ltd.	Minto, N.B.	Mar. 4
Joggins Coal Co. Ltd.	Joggins, N.S.	Mar. 7
Cumberland Fuel and Trading, Ltd. ...	River Hebert, N.S.	Mar. 7
Springhill Coal Mines	Springhill, N.S.	Mar. 8
Old Sydney Collieries Ltd. Princess Colliery	Sydney Mines, N.S.	Mar. 15
Dominion Coal Co. Ltd. #18 Colliery	New Waterford, N.S.	Mar. 15
#4, #20, #26 Collieries	Glace Bay, N.S.	Mar. 19
#12 Colliery	New Waterford, N.S.	Mar. 19
Bras d'Or Coal Co. Ltd.	Broughton, N.S.	Mar. 19
Evans' Coal Mines Ltd.	St. Rose, N.S.	Mar. 21
S. J. Doucet & Sons, Ltd.	Inverness, N.S.	Mar. 21
Chestico Coal Ltd.	Port Hood, N.S.	Mar. 22
Acadia Coal Company Ltd. McBean Mine	Thorburn, N.S.	Mar. 23
Wet Washery (at Allan Shaft)	Stellarton, N.S.	Mar. 23
The Canmore Mines Ltd.	Canmore, Alta.	Apr. 4

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	<i>Plant Location</i>	<i>Date of Visit</i>
Amalgamated Coals Ltd.	East Coulee, Alta.	Apr. 5
Century Coals Ltd.	East Coulee, Alta.	Apr. 5
Federated Co-operatives Ltd.	Drumheller, Alta.	Apr. 5
Red Deer Valley Coal Company Ltd.	Nacmine, Alta.	Apr. 5
Lethbridge Collieries, Ltd.	Lethbridge, Alta.	Apr. 6
Crow's Nest Pass Coal Co. Ltd. (2) ..	Michel, B.C.	Apr. 7
West Canadian Collieries, Ltd.	Blairmore, Alta.	Apr. 8
Coleman Collieries Ltd.	Coleman, Alta.	Apr. 9
Coleman Collieries Ltd.	Tent Mountain, B.C.	Apr. 9
Alberta Coal Ltd.	Wabamun, Alta.	Apr. 12
Forestburg Collieries Ltd.	Forestburg, Alta.	Apr. 13
Comox Mining Co. Ltd.	Tsable River, B.C.	Apr. 20

THERMAL POWER PLANTS

<i>Company</i>	<i>Plant Location</i>	<i>Date of Visit</i>
Saskatchewan Power Corporation	Estevan, Sask.	Feb. 4
New Brunswick Electric Power Commission	East Saint John, N.B.	Mar. 3
New Brunswick Electric Power Commission	Grand Lake, N.B.	Mar. 4
Canada Electric Co. Ltd.	Maccan, N.S.	Mar. 7
Calgary Power Ltd.	Wabamun, Alta.	Apr. 12

OTHER FACILITIES VISITED

<i>Organization</i>	<i>Facility Location</i>	<i>Date of Visit</i>
Saskatchewan Department of Mineral Resources — Subsurface Geolog- ical Laboratory (drill-core storage and research)	Regina, Sask.	Feb. 2
Dominion Briquettes and Chemicals Limited (briquette plant)	Bienfait, Sask.	Feb. 4
Mines Branch, Department of Mines and Technical Surveys (Fuel Re- search Laboratories)	Ottawa, Ont.	Feb. 12
Irving Refining Ltd. (Oil refinery)	East Saint John, N.B.	Mar. 3

Appendix E

<i>Organization</i>	<i>Facility Location</i>	<i>Date of Visit</i>
Springhill Wood Products Ltd. (wood products)	Springhill, N.S.	Mar. 8
Surette Battery Co. Ltd. (commercial batteries)	Springhill, N.S.	Mar. 8
Springhill Institution (federal penitentiary)	Springhill, N.S.	Mar. 8
British Canadian Co-op Society Ltd. ..	Sydney Mines, N.S.	Mar. 15
Dominion Iron & Steel Ltd. (blast furnace, open hearth and rolling mill plants)	Sydney, N.S.	Mar. 18
Donato-Faini and Figli Canada Ltd. ..	Stellarton, N.S.	Mar. 23
Shell Oil Company of Canada Ltd. (Natural gas processing plant) ..	Jumping Pound, Alta.	Apr. 2
Crow's Nest Pass Coal Co. Ltd. (coking plant)	Michel, B.C.	Apr. 7
Alberta Research Council (coal research laboratories)	Edmonton, Alta.	Apr. 11
Canadian Chemical Co. Ltd. (petrochemicals)	Edmonton, Alta.	Apr. 11
Victory Soya Mills Ltd. (coal and oil-fired boilers)	Toronto, Ont.	June 3
Ryerson Institute of Technology (technical education)	Toronto, Ont.	June 3

APPENDIX F

SUBMISSIONS

SUBMISSIONS RECEIVED AT PUBLIC HEARINGS

Regina, Saskatchewan

- Exhibit No. 1—The Government of Saskatchewan
2—Great West Coal Company Limited and Manitoba and Saskatchewan Coal Company (Limited)
3—The Chamber of Commerce of the City of Estevan and District
4—Dominion Briquettes and Chemicals Ltd.

Montreal, Quebec

- Exhibit No. 5—Canadian Pacific Railway Company
6—Canadian National Railways
7—Canadian Import Company

Toronto, Ontario

- Exhibit No. 8—The Government of Ontario
9—The Steel Company of Canada, Limited
10—Algoma Steel Corporation, Limited
11—Canadian Commercial Coal Dock Operators Association
12—Canadian Coal Importers and Distributors
13—Canadian Importers and Distributors of Bituminous Coal
14—The Hydro-Electric Power Commission of Ontario
15—National Coal Association, Washington, D.C.
16—Wm. A. Vanderburgh II, Shareholder, Dominion Coal Company, Limited

Fredericton, N.B.

- Exhibit No. 17—The Province of New Brunswick
18—A. W. Wasson Limited
19—Avon Coal Company Limited
20—District 26, United Mine Workers of America

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Halifax, N.S.

- Exhibit No. 21—The Province of Nova Scotia
- 22—Nova Scotia Light and Power Company, Limited
- 23—New Glasgow Chamber of Commerce
- 24—Town of Westville
- 25—United Mine Workers of America, District 26, Sub-District 5, Pictou County, N.S., Locals 8672 and 4481

Sydney, N.S.

- Exhibit No. 26—The Province of Newfoundland
- 27—Dominion Coal Company, Limited
- 28—District 26, United Mine Workers of America
- 29—Town of New Waterford
- 30—The Cape Breton Island Industrial Development Council
- 31—The Nova Scotia Federation of Labour
- 32—Cape Breton District Command, Canadian Legion
- 33—Independent Coal Operators of Nova Scotia
- 34—Municipality of the County of Cape Breton
- 35—Cape Breton Joint Expenditure Board
- 36—Associated Boards of Trade of Cape Breton Island
- 37—The Fraternal Organizations of Glace Bay and Environs
- 38—The Anglican Clergy of Cape Breton Deanery, Diocese of Nova Scotia
- 39—New Industries Committee of the Sydney City Council
- 40—Saint Francis Xavier University Extension Department
- 41—The Towns of Sydney Mines, North Sydney, Florence, Little Bras d'Or and Surrounding Areas
- 42—The Town of Glace Bay
- 43—The Town of Louisburg

Calgary, Alberta

- Exhibit No. 44—Government of the Province of Alberta
- 45—Research Council of Alberta
- 46—The Coal Operators' Association of Western Canada

Appendix F

- 47—The Drumheller Coal Operators Association
- 48—The Alberta Reclamation Association
- 49—The Canadian Institute of Mining and Metallurgy,
Coal Division
- 50—District 18, United Mine Workers of America
- 51—Joint Crow's Nest Pass Towns' Committee
- 52—The Lethbridge Chamber of Commerce
- 53—The City of Drumheller
- 54—Calgary Power Limited

Victoria, B.C.

- Exhibit No. 55—The Government of British Columbia
- 56—Canadian Collieries Resources Limited
- 57—Western Canada Fuel Association
- 58—J. Saxon Sledding, Private Citizen

OTHER SUBMISSIONS RECEIVED

- Statement from Canadian Import Company
- Statements from The Coal Operators' Association of Western Canada
- Statement from Noranda Mines Limited
- Statement from The Consolidated Mining and Smelting Company of
Canada Limited
- Statement from The Ontario-Minnesota Pulp and Paper Company
Limited
- Statement from Avon Valley Greenhouses Limited
- Statement from Valley Camp Coal Company Limited
- Statement from Canadian Pacific Railway Company
- Statement from Polymer Corporation Limited
- Statement from The Steel Company of Canada Limited
- Document from Weaver Coal Company
- Statement from Joggins Coal Company Limited
- Statements from Cumberland Fuel and Trading Ltd.
- Statement from Evans Coal Mines Ltd.
- Statement from Avon Coal Company
- Statements from Calgary Power Limited
- Statement from Canadian Importers and Distributors of Bituminous
Coal
- Submission from J. C. Marsh, P. Eng., Sydney, Nova Scotia

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Statement from G. G. Crowson, Moncton, New Brunswick
Documents from W. P. Dryer, Consulting Engineer, Durham, New Hampshire, U.S.A.
Statement from Frank H. Sobey, Stellarton, Nova Scotia
Statement from Theodore Sullivan, Marysville, New Brunswick
Statement from Robert Archer-Shee, Montreal, Quebec
Statement from Toronto Harbour Commissioners
Submission from The Associated Boards of Trade of Cape Breton Island
Statement from Upper Lakes Shipping Limited
Submission from S. J. Doucet & Sons Limited
Submission from The St. Rose, Port Hood and Inverness Local Unions, United Mine Workers of America
Statement from D. W. & R. A. Mills Limited
Statement from Western Dominion Coal Mines Limited
Statement from Manitoba and Saskatchewan Coal Company (Limited)
Statement from The City of Drumheller, Alberta
Documents from The New Brunswick Electric Power Commission
Documents from Department of Trade and Commerce, Ottawa
Documents from Department of Mines and Technical Surveys, Ottawa
Documents from Department of Northern Affairs and National Resources, Ottawa
Statement from Forestburg Collieries Limited
Memorandum of Information Submitted by the Government of Manitoba
Documents from Department of Mines, Nova Scotia
Documents from Department of Trade and Industry, Nova Scotia
Documents from Department of Mines and Minerals, Alberta
Documents from Department of Mines and Petroleum Resources, British Columbia
Documents from Mines Branch, Department of Lands and Mines, New Brunswick
Documents from Department of Mineral Resources, Saskatchewan
Documents from Saskatchewan Power Corporation
Submission from Town of Stellarton, Nova Scotia
Documents from City of Calgary, Alberta
Approximately 50 supplementary statements and documents from Dominion Steel and Coal Corporation, Limited
67 Statements, Documents and Letters of Information from Dominion Coal Board

APPENDIX G

SPECIAL STUDIES PREPARED AT THE REQUEST OF THE ROYAL COMMISSION ON COAL

DEPARTMENT OF MINES AND TECHNICAL SURVEYS

MINES BRANCH (Fuels and Mining Practice Division)

Mine Mechanization and Its Contribution to the Competitiveness of Canadian Coal; Internal Report FMP-60/55-MIN, April, 1960, by A. Ignatieff, Chief of Division and A. Brown, Head, Mining Research Section. (15 pp., 1 fig., 3 tables)

Research as Related to Increased Coal Consumption; Internal Report FMP 60/60-ADM, May, 1960, by A. Ignatieff, Chief of Division and Dr. D. S. Montgomery, Senior Scientist. (13 pp.)

Non-Fuel Uses of Coal and Coal By-Products; Internal Report FMP 60/76-ADM, May, 1960, by Dr. D. S. Montgomery, Senior Scientist. (15 pp., 1 table)

Combustion Use of Canadian Coal, Trends and Future Prospects; Internal Report FMP 60/44-MECH, May, 1960, by E. R. Mitchell, Head, Combustion Section.

Appendix on Consumption of Coal by Industry, 1948-1958 by T. E. Tibbetts, Acting Head, Coal Preparation and Surveys Section. (23 pp., 6 tables)

Thermal-Electric Power in Canada with Particular Reference to the Regional Fuel Requirements of the Thermal Generating Facilities Operated by the Electric Utility (Central Station) Industry; Internal Report FMP 60/65-FP, May, 1960, by C. E. Baltzer, Head, Fuel and Power Section. (51 pp., 16 tables)

Interrelationship of Fuels and Technological and Other Factors Limiting their Interchangeability; Confidential Memorandum dated June 14, 1960, by A. Ignatieff, Chief of Division. (6 pp.)

GEOLOGICAL SURVEY OF CANADA (Fuels and Stratigraphy Division)

Coal Reserves of Canada; Topical Report No. 17, 1960, by B. A. Latour. (40 pp., 7 figs., 12 tables)

Estimate of Coal Reserves in the Lingan Block, Sydney, Nova Scotia; February, 1960, by B. A. Latour. (6 pp., 1 fig., 1 table)

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GEOGRAPHICAL BRANCH (Research Division)

Cape Breton Island Agriculture; 1960, by C. W. Raymond. (25 pp., 8 figs., 7 tables)

The Cape Breton Island Forest Industry; 1960, by C. W. Raymond. (16 pp., 7 figs., 8 tables)

The Cape Breton Island Tourist Industry; 1960, by C. W. Raymond. (59 pp., 11 figs., 25 tables)

MINERAL RESOURCES DIVISION

Competitive Position of DOSCO as a Steel Producer; Mineral Resources Internal Report MRI-54/60, March 21, 1960, by R. B. Elver. (17 pp., 7 tables)

Forecast of Metallurgical Coke Consumption in Canada to 1980; Mineral Resources Internal Report MRI-55/60, March 24, 1960, by R. B. Elver. (11 pp., 5 tables)

Direct Government Assistance to Natural Gas Transportation; May, 1960, by R. B. Toombs. (24 pp., 1 fig.)

Mineral Resources Benefits to Date and Possible Future Benefits to Ontario and Quebec from the Northern Boundaries Extensions of 1912; June 23, 1960, by R. J. Jones. (8 pp., 1 fig., 2 tables)

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NATIONAL PARKS BRANCH

Cape Breton Highlands National Park—Potential Development; April 26, 1960. (17 pp., 3 figs.)

Fortress of Louisbourg—Historical Background; March, 1960. (14 pp.)

Plan for the Restoration of the Fortress of Louisbourg and the Area Surrounding the Fortress Which has Historical Significance—A Preliminary Study; February, 1960, by Mr. G. L. Scott, Chief Engineer, Mr. N. P. Robinson, Assistant Chief Engineer, Mr. A. D. Perry, Mr. L. R. Vachon, and Mr. H. J. Delcorde, all of the Engineering Services Division. (41 pp., 13 figs., 45 pp. of tables)

DOMINION STEEL AND COAL CORPORATION

Submission to the Royal Commission on Coal by Dominion Steel and Coal Corporation, Limited in respect to The Use of Nova Scotia Coal in Sydney Steel Operations; March 5, 1960. (69 pp., 19 exhibits)

Appendix G

Statement Showing Coal Reserves to Four Mile Limit; June 6, 1960. (1 table, 3 maps)

Statement Showing Coal Reserves to Three Mile Limit; June 8, 1960. (1 table, 3 maps)

Hub Seam; June 3, 1960. (6 pp.)

Plans of Sydney Coal Field Showing Outlines of Workings in Phalen and Harbour Seams as of December 31, 1959; (2 maps)

TECHNICAL ADVISER TO THE ROYAL COMMISSION ON COAL

A Report on the Technical Aspects of the Canadian Coal Problem, Part I; May, 1960, by Dr. A. E. Cameron. (18 pp., 8 tables)

A Report on the Technical Aspects of the Canadian Coal Problem, Part II; May 17, 1960, by Dr. A. E. Cameron. (33 pp.)

Production Potential, Dominion Steel and Coal Corporation; August 5, 1960, by Dr. A. E. Cameron. (20 pp.)

SPECIAL ADVISER TO THE ROYAL COMMISSION ON COAL

Report to Royal Commission on Coal; April, 1960, by W. V. Sheppard, Director-General of Reconstruction, National Coal Board, London, England. (16 pp.) Forms Appendix N of the Commission Report.

APPENDIX H

TONNAGES AND COSTS OF CANADIAN COAL MOVED UNDER SUBVENTION, BY PROVINCE OF ORIGIN 1928-29 TO 1959-60

Tonnages and Costs of Canadian Coal Moved Under Subvention, By Province of Origin—1928-29 to 1959-60

Fiscal Year	Canada			Nova Scotia			New Brunswick		
	Tons	Cost	Cost/Ton	Tons	Cost	Cost/Ton	Tons	Cost	Cost/Ton
1928-29	251,072.00	\$ 463,664.05	\$1.85	201,504.00	\$ 173,500.82	\$0.86	337.00	\$ 512.60	\$1.52
1929-30	347,947.00	382,341.96	1.10	313,228.00	183,866.50	0.59	46.00	89.70	1.95
1930-31	560,939.00	510,308.25	0.91	384,164.00	228,071.75	0.59	4.00	7.80	1.95
1931-32	795,302.00	631,169.09	0.79	413,309.00	217,566.18	0.53	562.00	395.06	0.70
1932-33	1,155,642.00	994,853.77	0.86	698,452.00	548,275.54	0.78	907.00	729.16	0.75
1933-34	2,101,124.00	2,330,435.37	1.11	1,610,736.00	1,841,979.22	1.14	1,963.00	1,671.18	0.85
1934-35	2,255,428.00	2,008,359.04	0.89	1,680,914.00	1,466,393.62	0.87	9,811.00	8,293.32	0.85
1935-36	2,241,865.00	2,005,083.95	0.89	1,612,763.00	1,393,352.08	0.86	18,249.00	13,192.72	0.72
1936-37	2,355,715.00	2,214,263.71	0.94	1,672,133.00	1,589,017.66	0.95	22,798.00	16,700.71	0.73
1937-38	2,607,165.00	2,453,808.91	0.94	1,912,635.00	1,803,270.27	0.94	44,442.00	34,329.90	0.77
1938-39	2,020,844.00	1,865,589.29	0.92	1,317,466.00	1,220,706.75	0.93	33,038.00	24,968.71	0.76
1939-40	3,645,725.00	4,476,916.22	1.23	2,633,192.00	3,228,861.75	1.23	56,354.00	46,218.93	0.82
1940-41	2,920,328.00	4,354,575.51	1.49	1,827,822.00	2,532,659.03	1.39	59,353.00	42,633.88	0.72
1941-42	3,221,168.00	4,419,361.89	1.37	1,814,744.00	1,898,156.88	1.05	31,839.00	23,003.36	0.72
1942-43	2,550,415.00	4,498,252.52	1.76	1,812,269.00	3,446,790.63	1.90	5,924.00	4,741.74	0.80
1943-44	828,851.00	1,794,088.60	2.16	579,790.00	1,606,766.76	2.77	6,762.00	5,473.92	0.81
1944-45	1,143,143.76	2,312,507.77	2.02	847,359.52	2,040,990.10	2.41	3,959.45	2,942.99	0.74
1945-46	1,163,334.12	1,897,468.88	1.63	460,287.07	799,318.90	1.74	682.00	440.70	0.65
1946-47	1,108,346.49	1,553,532.28	1.40	347,432.17	322,676.01	0.93	2,555.20	2,064.59	0.81
1947-48	616,938.25	764,899.73	1.24	353,944.40	210,559.08	0.59	2,527.55	1,847.78	0.73
1948-49	1,782,115.86	1,679,680.46 ⁽¹⁾	0.94	1,444,352.56	1,008,934.41 ⁽¹⁾	0.70	864.72	693.08	0.80
1949-50	2,836,732.09	3,918,017.31 ⁽¹⁾	1.38	2,086,066.82	2,653,604.24 ⁽¹⁾	1.27	3,153.23	3,940.95	1.25
1950-51	2,699,615.16	3,018,188.61 ⁽¹⁾	1.12	1,737,504.57	1,397,041.16 ⁽¹⁾	0.80	2,311.30	1,989.27	0.86
1951-52	2,586,042.08	4,623,696.94 ⁽¹⁾	1.79	1,761,744.57	3,257,626.61 ⁽¹⁾	1.85	2,514.15	2,422.68	0.96
1952-53	2,405,766.75	5,949,004.86 ⁽¹⁾	2.47	1,625,966.91	4,773,616.12 ⁽¹⁾	2.94	2,781.75	3,719.31	1.34
1953-54	3,393,036.73	9,861,239.95 ⁽¹⁾	2.91	2,112,601.13	7,127,468.93 ⁽¹⁾	3.37	31,390.75	87,239.33	2.78
1954-55	3,688,857.03	11,340,044.42 ⁽¹⁾	3.07	2,550,516.07	8,689,017.94 ⁽¹⁾	3.41	43,576.72	75,754.21	1.74
1955-56	3,623,557.24	10,566,873.21 ⁽¹⁾	2.92	2,680,270.29	8,393,952.52 ⁽¹⁾	3.13	32,904.45	56,707.65	1.72
1956-57	3,321,614.06	9,115,082.98 ⁽¹⁾	2.74	2,474,481.05	7,043,377.71 ⁽¹⁾	2.85	20,193.45	40,408.51	2.00
1957-58	3,003,788.76	8,320,142.97 ⁽¹⁾	2.77	2,148,340.88	6,526,659.82 ⁽¹⁾	3.04	73,094.76	120,664.39	1.65
1958-59	2,729,522.33	9,186,020.54 ⁽¹⁾	3.37	2,238,104.33	8,257,741.93 ⁽¹⁾	3.69	100,531.83	161,768.18	1.61
1959-60	3,090,021.63	15,491,077.01 ⁽¹⁾	5.01	2,414,786.27	13,518,396.11 ⁽¹⁾	5.60	155,702.30	289,756.39	1.86
Total	69,051,962.34	\$135,000,550.05	\$1.96	47,768,859.61	\$99,400,217.03	\$2.08	771,195.61	\$1,075,322.70	\$1.39

Source: Dominion Coal Board.

(1) Payments on movements of waterborne coal during these years were made on an accountable advance basis. Included in the last nine years are final adjustments in respect of prior years.

Tonnages and Costs of Canadian Coal Moved Under Subvention, By Province of Origin—1928-29 to 1959-60 (conc.)

Fiscal Year	Saskatchewan			Alberta and Crowsnest Area of B.C.			B.C. and Alberta Ships Stores and Export		
	Tons	Cost	Cost/Ton	Tons	Cost	Cost/Ton	Tons	Cost	Cost/Ton
1928-29	—	\$ —	\$ —	49,231.00	\$ 289,650.63	\$ 5.88	—	\$ —	\$ —
1929-30	—	—	—	34,673.00	198,385.76	5.72	—	—	—
1930-31	38,985.00	19,479.33	0.50	137,786.00	262,749.37	1.91	—	—	—
1931-32	78,145.00	32,349.24	0.41	211,361.00	348,234.66	1.65	91,925.00	32,623.95	0.35
1932-33	122,274.00	51,070.38	0.41	239,719.00	352,459.18	1.47	94,227.00	42,319.51	0.45
1933-34	134,087.00	53,977.50	0.40	269,397.00	394,887.11	1.47	84,941.00	37,920.36	0.45
1934-35	132,253.00	24,386.84	0.18	337,652.00	457,132.70	1.35	94,798.00	52,152.56	0.55
1935-36	148,884.00	41,603.89	0.28	352,764.00	477,730.02	1.35	109,205.00	79,205.24	0.73
1936-37	151,003.00	36,254.91	0.24	357,060.00	449,569.59	1.26	152,721.00	122,720.84	0.80
1937-38	153,559.00	35,599.50	0.23	301,824.00	415,904.53	1.38	194,705.00	164,704.71	0.85
1938-39	158,461.00	36,717.76	0.23	349,968.00	451,284.97	1.29	161,911.00	131,911.10	0.81
1939-40	119,052.00	33,457.50	0.28	559,318.00	931,590.06	1.67	277,809.00	236,787.98	0.85
1940-41	21,522.00	21,193.24	0.98	831,182.00	1,618,850.93	1.95	180,449.00	139,238.43	0.77
1941-42	17,766.00	17,071.11	0.96	1,263,012.00	2,410,774.95	1.91	93,807.00	70,355.59	0.76
1942-43	12,296.00	11,817.24	0.96	591,642.00	938,689.95	1.58	128,284.00	96,212.96	0.76
1943-44	15,530.00	14,947.98	0.96	188,912.00	138,506.95	0.73	37,857.00	28,392.99	0.75
1944-45	16,098.03	15,443.37	0.96	245,439.00	230,415.69	0.94	30,287.47	22,715.62	0.75
1945-46	13,521.54	12,964.64	0.96	668,066.00	1,069,161.58	1.60	20,777.39	15,583.06	0.75
1946-47	15,305.79	14,566.53	0.95	731,560.00	1,205,605.07	1.65	11,493.41	8,620.08	0.75
1947-48	13,960.55	13,301.69	0.95	238,828.00	533,428.12	2.23	7,684.05	5,763.06	0.75
1948-49	49,339.50	35,747.32	0.72	281,981.00	630,111.63	2.23	5,592.00	4,194.02	0.75
1949-50	118,999.41	83,304.80	0.70	590,829.00	1,146,139.06	1.94	37,683.20	31,028.26	0.82
1950-51	190,770.33	138,910.42	0.73	763,098.00	1,475,799.51	1.93	5,931.00	4,448.25	0.75
1951-52	149,456.01	118,841.17	0.80	559,385.00	1,135,601.05	2.03	112,942.25	109,205.43	0.97
1952-53	143,138.71	118,035.85	0.82	597,462.00	1,018,836.74	1.71	36,417.45	34,796.84	0.96
1953-54	221,962.78	191,614.89	0.86	1,025,399.00	2,453,654.31	2.39	1,683.31	1,262.49	0.75
1954-55	246,742.45	211,181.50	0.86	847,739.00	2,363,878.52	2.79	283.00	212.25	0.75
1955-56	284,080.32	242,323.04	0.85	626,122.00	1,873,755.22	2.99	179.70	134.78	0.75
1956-57	231,606.33	203,330.49	0.88	594,069.00	1,826,768.87	3.08	1,264.15	1,117.40	0.95
1957-58	336,489.42	299,462.30	0.89	402,031.00	1,280,135.80	3.18	43,833.05	93,220.66	2.13
1958-59	211,888.46	191,238.81	0.90	151,351.00	474,783.25	3.14	27,647.00	100,488.37	3.63
1959-60	121,326.48	102,608.36	0.85	134,664.70	411,616.57	3.06	263,541.88	1,168,699.58	4.43
Total	3,668,503.11	\$2,422,801.60	\$0.66	14,533,524.70	\$29,266,092.35	\$2.01	2,309,879.31	\$2,836,116.37	\$1.23

— No shipments made under subvention.

APPENDIX I

A BRIEF HISTORY OF CANADIAN COAL SUBVENTIONS 1928-29 TO 1959-60

GENERAL

The policy of assisting the Canadian coal industry by payment of assistance on the transportation of the coal from the mines in Eastern and Western Canada to the large market in the central provinces was first commenced in 1924 and was firmly established by 1930. The main tenet of the policy was the payment of a sufficient proportion of the transportation cost to enable the consumer in the central provinces to buy Canadian coal at the same cost to him as imported coal. The receiving area was limited by definition and also by the provision of a maximum on the assistance which acted to limit the market area.

NOVA SCOTIA

While the first use of transportation subventions assistance for Nova Scotia coal was in 1924, it was not until May 1931 (PC 1300) that the first subvention on Nova Scotia coal being shipped into Quebec and Ontario was established by Parliament at a set rate per ton. Movement of all-rail shipments were covered by this program and further transshipment from St. Lawrence ports was also included. In 1932 subvention assistance was extended to railway purchases of coal for their own use in Quebec and Ontario, based on the difference in cost between Canadian coal and imported coal at point of use; up to a maximum of \$2.00 a ton. From that time until World War II these rates were varied to meet current market conditions.

In the first years of the war, large tonnages were moved to Ontario and Quebec under subvention. This movement was, in part, due to the exchange situation against United States funds and the necessity to buy as much as possible in Canada. The submarine activity in the St. Lawrence and in eastern waters from 1942 reduced this movement to the very limited amount that could be carried over the Canso ferry. Assistance was also provided during the war on the movement of coal to destinations in the Maritime Provinces. This assistance, however, was part of the Wartime Policy of protecting the cost of living and not of the general coal subvention policy.

After the war, the original policy was gradually reapplied with shipments to Quebec gradually increasing from 1947. Shipments to Ontario, however, were not immediately resumed and remained comparatively small in quantity

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until 1954. From June 1, 1955 to August 31, 1956 there was provision established to pay subventions on Nova Scotia slack coal exported, other than to the United States and its possessions. This was designed to meet the shortage of coal in the United Kingdom and in West Germany. For the period June 1, 1955 to March 31, 1956 the rate was \$2.50 per ton on the first 120,000 tons and \$2.30 per ton on the next 130,000 tons. From April 1, 1956 to August 31, 1956 the rate was \$2.30 per ton on 140,859 tons. These subvention payments were included in the overall Nova Scotia statistics but according to export figures there were the following shipments of slack coal made:

	1955	1956
West Germany	11,203 tons	4,050 tons
United Kingdom	136,495 tons	231,180 tons
Total	147,698 tons	235,230 tons

From the 1928-29 fiscal year to the end of the 1959-60 fiscal year (31 years) a total of \$99,400,217.03 has been paid out in subvention covering the shipment of 47,768,859.61 tons of coal at an average payment of \$2.08 per ton. The average rate paid in 1959-60 was \$5.60 per ton—\$13,518,396.11 on 2,414,786.27 tons of coal.

NEW BRUNSWICK

At the same time that subventions were granted on Nova Scotia coal, a subvention on New Brunswick coal shipped into Quebec by rail was established.

Later, the subvention assistance was extended to cover coal used by the railways in Quebec and Ontario on the same basis as the Nova Scotia assistance. In practice, no coal was moved to Ontario for railway use. From the fiscal year 1928-29 to the end of the fiscal year 1959-60, the total subvention payment was \$1,075,322.70 covering movement of 771,195.61 tons of coal at an average payment of \$1.39 per ton. The average rate paid in 1959-60 was \$1.86 per ton—\$289,756.39 on 155,702.30 tons of coal.

SASKATCHEWAN

In 1930, when assistance was made available to Alberta coal, the subvention assistance plan was also extended to Saskatchewan lignite being shipped into Manitoba and into Ontario between the Manitoba border and the Head-of-the-Lakes for industrial purposes. This was done to maintain the existing competitive position of Saskatchewan coal as against Alberta

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and British Columbia coal in the same market areas. With the advent of World War II the assistance on shipments to Manitoba was dropped and has not been reinstated.

From the 1930-31 fiscal year to the end of the 1959-60 fiscal year, payments totalled \$2,422,801.60 covering shipments of 3,668,503.11 tons at an average rate of 66 cents a ton. In 1959-60 there were 121,326.48 tons shipped at a cost of \$102,608.36 or 85 cents a ton.

ALBERTA AND THE CROWSNEST PASS AREA OF BRITISH COLUMBIA

In 1930 the first subvention was authorized on bituminous coal from this area going into Manitoba and the Head-of-the-Lakes area of Ontario for industrial use. This was directed towards the displacement of United States bituminous by Canadian bituminous. In 1933 a special subvention rate, coupled with a set freight rate granted by the railways, was established on "domestic" coal moving into Ontario for non-industrial use. Special rates on railway locomotive use in Saskatchewan, Manitoba and Ontario have been included as well.

From the fiscal year 1928-29 which covered the first test shipments to the end of the 1959-60 fiscal year, total subvention payments were \$29,-266,092.35 covering the shipment of 14,533,524.70 tons at an average rate of \$2.01 per ton. In the 1959-60 fiscal year there were 134,664.70 tons shipped, costing \$411,616.53 or \$3.06 per ton.

EXPORT AND SHIPS' BUNKERS SUBVENTIONS

Alberta and British Columbia

On May 30, 1931 the first subvention assistance was authorized on British Columbia coal for export other than to the United States, or for sale to foreign ships for bunkering. In 1949 Alberta coal exported other than to the United States through Canadian seaports or sold for ships' bunkers, came under this subsidy as well. From the fiscal year 1931-32 to the end of the 1959-60 fiscal year, the total subvention payment was \$2,836,116.37 covering shipments of 2,309,879.31 tons of coal at a cost of \$1.23 a ton. In 1959-60 there were 263,541.88 tons shipped at a cost of \$1,168,699.58 or \$4.43 per ton.

ATLANTIC PROVINCES POWER DEVELOPMENT ACT SUBVENTIONS

One of the provisions of this Act of January 31, 1958 is for "payment by Canada to the province of a subvention in respect of eastern coal used in the operation of facilities for the generation of electricity by steam driven

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generators, if the province so requests". It is required that this "subvention" be distributed fairly among the operators of the power projects who, in turn, must reduce the rates charged for power sold for industrial use by the same amount.

This assistance is, therefore, not a transportation subvention but is a method of assisting the manufacturing industry of the Atlantic Provinces by the reduction in the cost of the electricity used. For the record, the total subvention payments to March 31, 1960 are as follows:

Nova Scotia	\$2,265,959
New Brunswick	1,274,234
	<hr/>
Total	\$3,540,193

APPENDIX J

ESTIMATED TOTAL MONIES SPENT BY THE FEDERAL GOVERNMENT IN SUPPORT OF AND IN ASSISTANCE TO THE CANADIAN COAL INDUSTRY TO MARCH 31, 1960

EXPENDITURES WHICH DIRECTLY ENCOURAGED THE USE OF CANADIAN COAL

Canadian Coal Equality Act, 1930

Otherwise known as the Coke Bounty Act, this Act was designed to pay a bounty of 49.5c. per ton on all Canadian bituminous coal used to produce coke for the Canadian iron and steel industry as long as tariff item 1019, Schedule B, remained in effect permitting a 99 per cent drawback on imported coal used in the making of steel. This Act was primarily an aid to the iron and steel industry (DOSCO).

	<i>Tons Moved</i>	<i>Cost</i>
Nova Scotia	17,220,593	\$8,524,194
(to Mar. 31/60)		

Stockpile Reduction Programme

Reduction of stockpile of coal (mainly slack coal) at Sydney, N.S., accumulated in 1958—\$631,000.

Government Directives Concerning Coal, March 8, 1955 to March 31, 1960.

On March 8, 1955, the Government directed:

(1) that, before the fuel burning equipment in any government building or building under government control which consumed 500 tons of coal per annum or more was changed from coal to other fuel, the Department concerned would consult with the Dominion Coal Board or the Interdepartmental Fuel Committee about economies expected and other relevant factors; and

(2) that, before any decision was made with regard to the type of fuel to be used in any government building or building under government control of a size which would require 50 tons of coal or more per annum, the Department concerned would consult with the Dominion Coal Board or the Interdepartmental Fuel Committee on the costs of various fuels and other relevant factors.

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On March 8, 1955, the Government directed:

"That Canadian coal be used in all government coal burning installations where the laid down cost of such coal did not exceed the competitive cost of other coals by more than ten per cent."

On February 18, 1958, the Government directed:

"That the present advantage of ten per cent of the laid down cost of coal granted to Canadian coal producers by Cabinet Directive of March 8th, 1955 be increased to twenty per cent of the laid down cost."

During the 1959-60 fiscal year, purchases of coal by the Department of Public Works and the Department of Defence Production, the two major coal-using Departments, were estimated to have cost \$400,000 extra because of this policy, covering some 208,000 tons of coal purchased in Canada.

It is not possible to estimate the cost to the Government of the first directive noted above, but an overall estimate of the additional cost to the Government for Canadian coal used under the ten per cent and twenty per cent price differential, from March 8, 1955 to March 31, 1960 would be between \$1,000,000 and \$1,500,000. Estimate—\$1,250,000.

Springhill Colliery Assistance Order, 1957

To aid Springhill Collieries of The Cumberland Railway and Coal Company, by granting additional assistance on Springhill coal shipped to Ontario and Quebec (this assistance ended in 1958 when a second mine disaster forced closure of the colliery). Total subsidies paid—\$175,550.91.

The Domestic Fuel Act, 1927 (Expired June 30, 1932)

This Act was designed to assist by subsidy the construction of coke plants using in part Canadian coal. For a period of up to 15 years a subsidy of up to \$1.00 per ton on Canadian coal used was paid to the plant owner to offset cost of construction. Actual payment was based on a percentage of the cost of construction (4 per cent for individual companies, 5 per cent for municipalities) per year over the contract period where at least 70 per cent of all coal used was Canadian. Only three companies took advantage of this Act as follows:

Nova Scotia Light and Power Company Limited. From April 1, 1928 to the end of the contract a total subsidy of \$130,235.74 was paid towards a capital expenditure of \$300,492.02. (43.3 per cent of total cost).

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Quebec Power Company. From April 15, 1930 to the end of the contract a total subsidy of \$187,195.99 was paid towards a capital expenditure of \$608,029.88. (30.8 per cent of total cost).

B. C. Electric, Power and Gas Company Limited. From June 30, 1932 to the end of the contract a total subsidy of \$473,302.78 was paid towards a capital expenditure of \$1,832,881.82. (25.8 per cent of total cost). Total subsidies paid—\$790,734.51 or 28.8 per cent of total plant costs.

Atlantic Provinces Power Development Act, 1958

Passed on January 31, 1958, this Act, in addition to loans for the construction of steam power plants and transmission lines in the Atlantic Provinces, provides for subvention payments on Eastern Canadian coal used in thermal electric power production in these same provinces with the provision that such subventions will be used to reduce the cost of industrial power to consumers. Subventions paid for the period December 1, 1957 to March 31, 1960 are as follows:

Nova Scotia	\$ 2,265,959
New Brunswick	1,274,234
Total	<u>\$ 3,540,193</u>

Coal Transportation Subventions (1928 to March 31, 1960)

	Tons Moved	Cost	Average Cost/ Ton	1959-60 Cost/ Ton
Nova Scotia.....	47,768,859.61	\$ 99,400,217.03	\$2.08	\$5.60
New Brunswick.....	771,195.61	1,075,322.70	1.39	1.86
Saskatchewan.....	3,668,503.11	2,422,801.60	0.66	0.85
Alberta & British Columbia Crowsnest Area.....	14,533,524.70	29,266,092.35	2.01	3.06
Alberta & British Columbia Export or Ships' Stores.....	2,309,879.31	2,836,116.37	1.23	4.43
Total Subventions.....	69,051,962.34	\$135,000,350.05	\$1.96	\$5.01

Dominion Fuel Board, 1922 to 1941

Average annual administration costs were \$25,000.

Estimated total cost—\$475,000

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Dominion Coal Board, 1948 to March 31, 1960

Total spent on administration and investigations—\$1,167,027.33

Order in Council P.C. 944 and Various Other Similar Orders in Council, 1932 to 1949

As of April 26, 1932 Order in Council P.C. 944 authorized payment to Canadian coal operators of the difference per ton between the laid down cost to coke operators or coal gas manufacturers of coal mined in Canada and that of imported coal up to \$1.00 per ton. It was designed particularly to encourage the movement of Nova Scotia coal to Montreal. Ottawa Gas Company Ltd., Shawinigan Chemicals Ltd., and Montreal Coke and Manufacturing Company received this subsidy—with most of it going to the latter company (\$1,599,798.40 for 1,629,072 tons of coal). Under similar Orders in Council, Nova Scotia coal moved to Hamilton By-Products Coke Ovens Ltd., and Western coal moved to Winnipeg Electric Co. Altogether approximately 1,700,000 tons of Nova Scotia coal and 700,000 tons of Western coal were moved under this assistance, to the benefit of the mine operators. On March 15, 1949 this assistance was cancelled on the advice of the Dominion Coal Board because Nova Scotia coal was no longer available to coke plants in Ontario and Quebec. The annual subsidies paid were included in the total subsidy figures for Nova Scotia coal and the appropriate Western coal subsidy figures.

Coal Production Assistance Act, 1959

This Act, originally called the Maritime Coal Production Assistance Act, 1949, provided for the extension of loans to coal producers in the Maritime Provinces under given conditions so as to increase production through mechanization of those mines whose continued operation was in the public interest. A maximum of \$10,000,000 was set for all loans, and \$7,500,000 for any one loan. No loan was to be for more than 2/3 of the estimated cost of the project. A special depreciation allowance on equipment purchased with the loan was also established.

In 1959 this Act became the Coal Production Assistance Act. Its field was extended beyond the Maritimes and a loan was authorized to a Saskatchewan coal company. As of March 31, 1960 there have been 17 loans authorized totalling \$11,135,780.67. Of this amount there has been \$9,816,106.19 advanced and \$2,885,147.36 repaid, leaving an outstanding balance of \$6,930,958.83. Details by company are as shown in the following table:

Loans under the Coal Production Assistance Act as of March 31, 1960

Name of Company	Authorized Loan	Advanced Loan	Repaid to Date	Outstanding	Rate (%)
Avon Coal Co. Ltd., Minto, N.B.....	\$ 1,542,000.00	\$1,542,000.00	\$ 854,500.00	\$ 687,500.00	2-4½
Bras d'Or Coal Co. Ltd., Bras d'Or, N.S.....	122,000.00	122,000.00	—	122,000.00	5-5½
Crawford Contractors Ltd., Minto, N.B.....	140,000.00	140,000.00	39,336.38	100,663.62	3½
Dominion Coal Co. Ltd., Sydney, N.S.....	7,500,000.00	6,984,584.83	1,278,278.70	5,706,306.13	3½-4
Doucet & Sons Ltd., Inverness, N.S.....	47,738.67	47,738.67	6,853.78	40,884.89	5
Four Star Collieries Ltd., Bras d'Or, N.S.....	162,000.00	162,000.00	162,000.00	—	2½-3½
D.W. & R.A. Mills, Ltd., Minto, N.B.....	519,850.00	519,850.00	519,850.00	—	4-5½
V.C. McMann Limited, Minto, N.B.....	36,192.00	36,192.00	24,328.50	11,863.50	3-3½
Western Dominion Coal Co. Ltd., Taylorton, Sask.....	1,066,000.00	261,740.69	—	261,740.69	5
	<u>\$11,135,780.67</u>	<u>\$9,816,106.19</u>	<u>\$2,885,147.36</u>	<u>\$6,930,958.83</u>	

Note: All loans are secured by chattel or real estate mortgages.

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EXPENDITURES WHICH DIRECTLY AND INDIRECTLY ENCOURAGED THE USE OF CANADIAN COAL DURING WARTIME

Emergency Coal Production Board, 1942 to 1946

Production Subsidies. These subsidies, "for maintaining and stimulating the production of Canadian coal and for ensuring an adequate and continuous supply thereof", were paid to both new and operating mines:

Paid to: Nova Scotia Mines	\$ 30,874,143.70
New Brunswick Mines	1,022,165.49
Saskatchewan Mines	555,276.19
Alberta Mines	2,917,643.42
British Columbia Mines	1,547,780.50
Total	\$ 36,917,009.30

Grants Made with No Repayment. Basically to gain immediate increased production but included grants for power installations, housing and \$62,458.91 to Province of Quebec for peat development. No Nova Scotia or British Columbia operators received this assistance.

Total \$ 278,814.64

Loans. Granted on a repayable basis, mainly to Alberta and Saskatchewan operators to bring in new mines, expand output.

Total loans granted	\$ 396,786.11
Total reported to Treasury Board as uncollectible	\$ 19,820.71

Alberta Strip Mines Sponsorships, 1943 to 1946. In order to increase production, new strip mines were required. Six locations were recommended in Alberta for operation by private companies with Board assistance. All mines involved operated at a loss and were closed early in 1944, only to reopen in June under new agreements. Operations terminated on February 20, 1946 and provided 852,711 tons of coal which materially assisted in preventing coal shortages in Western Canada and in Ontario.

Net LossApprox. \$ 1,400,000

Special Depreciation and Depletion Allowances. Primarily to Western mines. The Crow's Nest Pass Coal Co. Ltd., was allowed 20 per cent depreciation rate on a \$1.5 million plant built in 1942. The overall effect was to reduce the period over which assets could be depreciated rather than to reduce overall taxation.

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Wage Equalization Payments, 1942. Because basic wage rates between the Cape Breton and Springhill mines of Dominion Coal Co. Ltd., were at variance, as were rates between Old Sydney Collieries Ltd., and the Acadia Coal Co. Ltd., a subsidy was paid to the Dominion Coal Co., and to the Acadia Coal Co., to equalize wage rates during the period prior to production subsidies.

Paid to Dominion Coal Co., and Acadia Coal Co.	\$ 685,699.65
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Other Wartime Subsidies and Other Assistance

Cost of Living Bonus to maintain the price ceiling on coal—\$3,223,992.53 (1941-1943)

Emergency Diversion Subsidies to allocate Canadian or higher quality coal at same cost to users—\$283,387.31 (1943-1946)

Wagon Mine Transportation Subsidy to small Western mines during the winter of 1942-43 to meet a coal shortage—\$1,084.43

Production Assistance to cover losses by producers from January 1, 1942 to the date of establishment of the Emergency Coal Production Board (Nov. 23, 1942). This assistance applied to Acadia Coal Co. Ltd., and Dominion Coal Co. Ltd., only. Total subsidies paid—\$378,554.68.

Wartime Administration Costs of the Coal Administration, Coal Control and Emergency Coal Production Board—\$795,768.27.

Advertising Expenditures During Wartime

(a) Coal Conservation	\$220,781.57
(b) General	112,512.46
Total	<u>\$333,294.03</u>

EXPENDITURES WHICH INDIRECTLY ENCOURAGED THE USE OF CANADIAN COAL

Lignite Utilization Board, 1917 to 1923

On March 20, 1918 the Lignite Utilization Board was established under the joint sponsorship of the Government and the governments of Manitoba and Saskatchewan. A plant to develop commercial use for Saskatchewan lignite was built near Bienfait, Saskatchewan, in 1921 but was unsuccessful. It was closed in 1923 and finally sold in 1927. Net cost to the Federal Treasury was \$534,215.05.

Royal Commission on Coal

Geological Survey of Canada, Department of Mines and Technical Surveys

Estimated amount spent on coal surveys, etc., from 1907 to March 31, 1960, including \$330,081 on Sydney office and \$250,000 on field parties, both from April 1, 1946 to March 31, 1960, \$2,000,000.

Fuels and Mining Practice Division, Mines Branch, Department of Mines and Technical Surveys

This Division has carried out field and laboratory tests since 1907 to ascertain the characteristics and suitability of Canadian coals for different uses. According to the report of the Royal Commission on Coal 1946, prior to World War II the annual expenditure on this work averaged about \$19,500. However, from 1946 to 1957 about \$178,000 has been spent annually, and since 1957 expenditures have averaged about \$275,000 annually. For the period 1946-47 to 1959-60 an estimated \$3,600,000 has been spent on coal research, including expenditures on coal-fired turbine research, but excluding administrative costs. Some of the principal research projects currently being done are as follows:

- (1) Mining research with particular reference to ground stress problems in coal mining, from March, 1950 to March, 1960—approximately \$500,000.
- (2) Research into improved and new uses of coal in the following fields:
 - (a) Combustion and power generation; combustion of Canadian coals on grates; modifications in stoker equipment to permit the burning of Eastern Canadian coals successfully; smoke abatement; additives to coal. Expenditure—approximately \$95,000 since 1955.
 - (b) Carbonization: cleaning of high ash coal fines; petrography and blend studies for making high-quality coke. Expenditure—approximately \$90,000, mostly since 1957.
 - (c) Metallurgical Applications: agglomeration of coal fines with minerals; flash smelting with coal fines. Expenditure—approximately \$45,000 since 1957.
- (3) Research into the fundamental understanding of the complex structure of coal by developing a new technique of relating physical properties to chemical structure. This technique has been presently

Note: From 1952 to 1958 McGill University, under grant from the Government carried out an extensive investigation into the development of a coal-fired turbine engine. This experimental project yielded much useful information for designing industrial scale equipment and pointed up the metallurgical problems involved. No work has been done since 1958 as no industrial interest has been shown.

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applied to coal derivatives (tars and pitches) but further work may provide a more successful method for characterizing chemical structure of coal than presently available and thus furnish industry with a more systematic means of finding new uses. Expenditure—approximately \$85,000 since 1951.

- (4) Mordell coal-fired turbine, in collaboration with McGill University, from 1952 to 1958—approximately \$660,000.

An overall estimate of the amount spent on coal research from 1907 to March 31, 1960 would be between \$4,500,000 and \$5,000,000. Estimate—\$4,660,000.

Loans for Capital Expansion Under the Atlantic Provinces Power Development Act, January 31, 1958 to July 20, 1960

Loans made under this Act since January 31, 1958 have been to assist the Atlantic Provinces in the generation of electric energy in the Atlantic Provinces by steam-driven generators and the control and transmission of electric energy. As of July 20, 1960 the following amounts have been advanced:

	<i>Thermal Plants</i>	<i>Transmission Facilities</i>
Nova Scotia	\$ 2,588,520.57	\$ 3,240,633.59
New Brunswick	Nil	3,795,984.81
Total	\$ 2,588,520.57	\$ 7,036,618.40

NOTE: All of the Nova Scotia Loan for thermal plants has gone to the Trenton, N.S. plant of the Nova Scotia Power Commission.

Royal Commission on Coal

SUMMARY OF ESTIMATED TOTAL MONIES SPENT BY THE FEDERAL GOVERNMENT IN SUPPORT OF AND IN ASSISTANCE TO THE CANADIAN COAL INDUSTRY TO MARCH 31, 1960

GENERAL EXPENDITURES

Bounties, Subsidies, and Price Preference

Coal Equality Act	\$ 8,524,194
Stockpile Reductions (1958)	631,000
Special Government Price Preference	1,250,000 (est)
Springhill Colliery Assistance	175,551
Domestic Fuel Act	790,735
Atlantic Provinces Power Develop- ment Act	3,540,193

\$ 14,911,673

Subventions

Coal Transportation Subventions	\$ 135,000,350
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Administration

Dominion Fuel Board	\$ 475,000 (est)
Dominion Coal Board	1,167,027

\$ 1,642,027

Total General

\$ 151,554,050

WARTIME EXPENDITURES

Production Subsidies

New and Operating Mines	\$ 36,917,009
Grants (Non-repayable)	278,815
Losses on Loans	19,821
Alberta Strip Mines	1,400,000 (est)

\$ 38,615,645

Other Expenditures

Wage Equalization Payments	\$ 685,700
Cost of Living Bonus	3,223,993
Emergency Diversion Subsidies	283,387
Wagon Mine Subsidies	1,084
Assistance to cover Losses	378,555

\$ 4,572,719

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Administration

Wartime Controls	\$ 795,768
Advertising	333,294
	<hr/>
	\$ 1,129,062
Total Wartime	<u>\$ 44,317,426</u>

RESEARCH AND SURVEYS

Special Research

Lignite Utilization Board	\$ 534,215
Mordell Coal-fired Turbine	660,000
	<hr/>
	\$ 1,194,215

Department of Mines and Technical Surveys

Geological Survey of Canada	\$ 2,000,000 (est)
Fuels and Mining Practice Division, Mines Branch	4,000,000 (est)
	<hr/>
	\$ 6,000,000
Total Research and Surveys	<u>\$ 7,194,215</u>

Total Federal Expenditures to March 31, 1960

\$ 203,065,691

LOANS TO COAL OPERATORS AND OTHERS

Direct Assistance Advanced

Coal Production Assistance Act	\$ 9,816,106
(Total authorized — \$11,135,780.67)	

Indirect Assistance Advanced

Atlantic Provinces Power Develop- ment Act	\$ 9,625,139
(Thermal Plants — \$2,588,520.57)	

<i>Wartime Loans</i>	\$ 396,786
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Total Loans made to March 31, 1960	<u>\$ 19,838,031</u>
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APPENDIX K

ORDERS IN COUNCIL RESPECTING FINANCIAL ASSISTANCE ON THE MOVEMENT OF CANADIAN COAL IN EFFECT DURING THE FISCAL YEAR 1959-1960

NOVA SCOTIA

P.C. 1959-509
PRIVY COUNCIL CANADA

AT THE GOVERNMENT HOUSE AT OTTAWA
THURSDAY, the 23rd day of April, 1959.

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council, on the recommendation of the Minister of Mines and Technical Surveys and the Dominion Coal Board, is pleased hereby to revoke the Nova Scotia Coal Subvention Regulations made by Order in Council P.C. 1959-372 of 26th March, 1959, and to make the annexed Regulations Respecting Financial Assistance on the Movement of Coal Mined in the Province of Nova Scotia in substitution therefor, effective until 31st March, 1960.

Certified to be a true copy.
(Sgd.) R. B. BRYCE
Clerk of the Privy Council.

REGULATIONS RESPECTING FINANCIAL ASSISTANCE ON THE MOVE- MENT OF COAL MINED IN THE PROVINCE OF NOVA SCOTIA

1. These Regulations may be cited as the *Nova Scotia Coal Subvention*

Regulations.

2. In these Regulations,

- (a) "Board" means the Dominion Coal Board; and
- (b) "Nova Scotia coal" means coal mined in the Province of Nova Scotia.

Royal Commission on Coal

3. (1) Subject to these Regulations, the Board may grant financial assistance on the movement of Nova Scotia coal by rail from mines in that Province as follows:

- (a) to points in Ontario and to points in Quebec in the Districts of Temiskaming, Pontiac, Gatineau, Papineau and Argenteuil, assistance in an amount equal to seventy per cent of the freight rate applicable to the shipment or five dollars per net ton, whichever is the lesser;
- (b) to points in Quebec in the Districts of Charlevoix, Chicoutimi, Jonquiere-Kenogami, Lac St. Jean, Roberval, Montmorency, Quebec, Portneuf and Laviolette, assistance in an amount equal to thirty-five per cent of the freight rate applicable to the shipment; and
- (c) to points in Quebec in Districts other than those named above, excluding points east of Levis, assistance in an amount equal to fifty-five per cent of the freight rate applicable to the shipment.

(2) For the purpose of Subsection (1), "District" means the electoral district as plotted on the "Official Map 1956 20 miles to the inch" issued by the Department of Lands and Forests, Province of Quebec.

(3) Payments of assistance shall be made in each case to the railway.

(4) No assistance shall be paid under Subsection (1) unless the railway has reduced the freight rate by an amount equal to such assistance.

4. (1) Subject to these Regulations, the Board may grant financial assistance on the movement of Nova Scotia coal by water to ports in Quebec on the St. Lawrence River or the Gulf of St. Lawrence in an amount equal to the lesser of—

(a) the difference, as determined by the Board, between the laid-down cost of Nova Scotia coal and of imported coal at those ports; or

(b) four dollars and fifty cents per net ton;

but, where Nova Scotia coal is transported by water and transhipped for delivery to points in Ontario and Quebec described in paragraph (a) Subsection (1) of Section (3), the amount of assistance shall not be less than three dollars and twenty-five cents per net ton.

(2) Where coal referred to in Subsection (1) is transhipped at the ports of Montreal, Quebec or Three Rivers for delivery to any point in Ontario or Quebec, the Board may grant additional financial assistance in an amount equal to the lesser of—

(a) the difference, as determined by the Board between the laid-down cost of Nova Scotia coal and of imported coal at those points

(b) in the case of coal transhipped to points in Quebec, of two dollars and seventy-five cents per net ton, or

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(c) in the case of coal transhipped to points in Ontario, of four dollars and fifty cents per net ton.

(3) Payments of assistance shall be made in each case to the coal mine operator, the transportation agent or the coal distributor.

5. (1) The Board may grant financial assistance on the movement of Nova Scotia coal to be used by a railway and shipped directly from mines in Nova Scotia to points in New Brunswick, Quebec and Ontario, in an amount equal to the lesser of—

(a) the difference, as determined by the Board, between the laid-down cost to the railway at those points of Nova Scotia coal and of such imported coal as would, in the opinion of the Board, otherwise be used, or

(b) four dollars per net ton.

(2) Payments of assistance shall be made in each case to the railway.

6. No assistance shall be paid under these Regulations on shipments of less than carload lots.

7. (1) Assistance shall be paid only on shipments of coal from a coal mine that was in regular operation under legal permit and was making regular shipments of coal throughout the year 1958.

(2) Notwithstanding Subsection (1), in the case of the exhaustion or depletion of a mine described in Subsection (1), the Board may, on application by the operator of that mine, grant assistance on the shipment of coal from a mine other than a mine described in Subsection (1).

8. (1) Assistance shall not be granted on the movement of coal mined by operators who fail to furnish the Board with such information as it considers necessary for the administration of these Regulations.

(2) All operators, distributors and railways shall permit the Board or its authorized officers free access to their books, records and accounts for the purpose of securing or verifying such information as is necessary for the administration of these Regulations.

Royal Commission on Coal

NEW BRUNSWICK

P.C. 1959-508

PRIVY COUNCIL CANADA

AT THE GOVERNMENT HOUSE AT OTTAWA

THURSDAY, the 23rd day of April, 1959

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council, on the recommendation of the Minister of Mines and Technical Surveys and the Dominion Coal Board, is pleased hereby to revoke the New Brunswick Coal Subvention Regulations made by Order in Council P.C. 1959-371 of 26th March, 1959, and to make the annexed Regulations Respecting Financial Assistance on the Movement of Coal Mined in the Province of New Brunswick in substitution therefor, effective until 31st March, 1960.

Certified to be a true copy.

(Sgd.) R. B. BRYCE

Clerk of the Privy Council.

REGULATIONS RESPECTING FINANCIAL ASSISTANCE ON THE MOVEMENT OF COAL MINED IN THE PROVINCE OF NEW BRUNSWICK

1. These Regulations may be cited as the *New Brunswick Coal Subvention Regulations*.

2. In these Regulations,

(a) "Board" means the Dominion Coal Board; and

(b) "New Brunswick coal" means coal mined in the Province of New Brunswick.

3.(1) Subject to these Regulations, the Board may grant financial assistance on the movement of New Brunswick coal by rail from mines in that Province as follows:

(a) to points in Ontario and to points in Quebec in the Districts of Temiskaming, Pontiac, Gatineau, Papineau and Argenteuil, assistance in an amount equal to seventy per cent of the freight rate applicable to the shipment or five dollars per net ton whichever is the lesser;

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- (b) to points in Quebec in the Districts of Charlevoix, Chicoutimi, Jonquiere-Kenogami, Lac St. Jean, Roberval, Montmorency, Quebec, Portneuf and Laviolette, assistance in an amount equal to forty-five per cent of the freight rate applicable to the shipment; and
- (c) to points in Quebec in Districts other than those named above, excluding points east of Levis, assistance in an amount equal to fifty-five per cent of the freight rate applicable to the shipment.

(2) For the purpose of subsection (1), "District" means the electoral district as plotted on the "Official Map 1956, 20 miles to the inch" issued by the Department of Lands and Forests, Province of Quebec.

(3) Payments of assistance shall be made in each case to the railway.

(4) No assistance shall be paid under subsection (1) unless the railway has reduced the freight rate by an amount equal to such assistance.

4. (1) Subject to these Regulations, the Board may grant financial assistance on the movement of New Brunswick coal, to be used by a railway, to points in New Brunswick, Quebec and Ontario, in an amount equal to the lesser of—

(a) the difference, as determined by the Board, between the laid-down cost to the railway at those points of New Brunswick coal and of such imported coal as would, in the opinion of the Board, otherwise be used, or

(b) four dollars per net ton.

(2) Payments of assistance shall be made in each case to the railway.

5. No assistance shall be paid under these Regulations on shipments of less than carload lots.

6. (1) Assistance shall be paid only on shipments of coal from a coal mine that was in regular operation under legal permit and was making regular shipments of coal throughout the year 1958.

(2) Notwithstanding subsection (1), in the case of the exhaustion or depletion of a mine described in subsection (1), the Board may, on application by the operator of that mine, grant assistance on the shipment of coal from a mine other than a mine described in subsection (1).

7. (1) Assistance shall not be granted on the movement of coal mined by operators who fail to furnish the Board with such information as it considers necessary for the administration of these Regulations.

(2) All operators, distributors and railways shall permit the Board or its authorized officers free access to their books, records and accounts for the purpose of securing or verifying such information as is necessary for the administration of these Regulations.

Royal Commission on Coal

SASKATCHEWAN

P.C. 1959-370
PRIVY COUNCIL CANADA

AT THE GOVERNMENT HOUSE AT OTTAWA
THURSDAY, the 26th day of March, 1959.

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council, on the recommendation of the Minister of Mines and Technical Surveys and the Dominion Coal Board, is pleased hereby to revoke the Saskatchewan Coal Subvention Regulations made by Order in Council P.C. 1958-518 of 9th April, 1958, and to make the annexed Regulations respecting Financial Assistance on the Movement of Coal Mined in the Province of Saskatchewan in substitution therefor, effective for the fiscal year commencing April 1, 1959.

Certified to be a true copy.
(Sgd.) R. B. BRYCE
Clerk of the Privy Council.

REGULATIONS RESPECTING FINANCIAL ASSISTANCE ON THE MOVEMENT OF COAL MINED IN THE PROVINCE OF SASKATCHEWAN

1. These Regulations may be cited as the Saskatchewan Coal Subvention Regulations.

2. In these Regulations,

- (a) "Board" means the Dominion Coal Board; and
- (b) "Saskatchewan coal" means coal mined in the Province of Saskatchewan and includes briquettes made from such coal.

3. (1) Subject to these Regulations, the Board may grant financial assistance on the movement of Saskatchewan coal to points in Ontario for industrial use in an amount equal to twenty per cent of the freight rate applicable to the shipment or one dollar per net ton, whichever is the lesser.

(2) Payments of assistance shall be made in each case to the railway.

(3) No assistance shall be paid under subsection (1) unless the railway has reduced the freight rate by an amount equal to such assistance.

(4) No assistance shall be paid on shipments of less than carload lots.

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4. (1) Assistance shall be paid only on shipments of coal from a coal mine that was in regular operation under legal permit and was making regular shipments of coal throughout the year 1958.

(2) Notwithstanding subsection (1), in the case of the exhaustion or depletion of a mine described in subsection (1), the Board may, on application by the operator of that mine, grant assistance on the shipment of coal from a mine other than a mine described in subsection (1).

5. (1) Assistance shall not be granted on the movement of coal mined by operators who fail to furnish the Board with such information as it considers necessary for the administration of these Regulations.

(2) All operators, distributors and railways shall permit the Board or its authorized officers free access to their books, records and accounts for the purpose of securing or verifying such information as is necessary for the administration of these Regulations.

ALBERTA AND CROWSNEST AREA OF BRITISH COLUMBIA

P.C. 1959-368

PRIVY COUNCIL CANADA

AT THE GOVERNMENT HOUSE AT OTTAWA

THURSDAY, the 26th day of March, 1959.

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council on the recommendation of the Minister of Mines and Technical Surveys and the Dominion Coal Board, is pleased hereby to revoke the Alberta and British Columbia Crowsnest Pass Coal Subvention Regulations made by Order in Council P.C. 1958-516 of 9th April, 1958, and to make the annexed Regulations respecting Financial Assistance on the movement of coal mined in the Province of Alberta and the Crowsnest area of British Columbia in substitution therefor, effective for the fiscal year commencing April 1, 1959.

Certified to be a true copy.

(Sgd.) R. B. BRYCE

Clerk of the Privy Council.

Royal Commission on Coal

REGULATIONS RESPECTING FINANCIAL ASSISTANCE ON THE MOVEMENT OF COAL MINED IN THE PROVINCE OF ALBERTA AND THE CROWSNEST PASS AREA OF BRITISH COLUMBIA

1. These Regulations may be cited as the *Alberta and British Columbia Crowsnest Pass Coal Subvention Regulations*.

2. In these Regulations,

- (a) "Board" means the Dominion Coal Board; and
- (b) "western coal" means coal mined in the Province of Alberta or in the Crowsnest Pass area of the Province of British Columbia, and includes briquettes made from such coal.

3. (1) Subject to these Regulations, the Board may grant financial assistance on the movement of western coal to points in Manitoba and Ontario for industrial use, other than for a railway, in an amount equal to the lesser of—

- (a) the difference, as determined by the Board, between the laid-down cost at a designated point of western coal and of imported coal, or
- (b) four dollars per net ton.

(2) Subject to these Regulations, the Board may grant financial assistance on the movement of western coal for non-industrial use or for a railway for use other than in locomotives as follows:

- (a) on movements to Ontario points to which the freight rate per net ton at the time of shipment is less than nine dollars, in an amount equal to twenty per cent of the freight rate applicable to the shipment;
- (b) on movements to Ontario points to which the freight rate per net ton at the time of shipment is greater than nine dollars but less than eleven dollars and fifty cents, in the amount of three dollars and fifty cents per net ton; and
- (c) on movements to Ontario points to which the freight rate per net ton at the time of shipment is eleven dollars and fifty cents or greater, in the amount of four dollars per net ton;

(3) No assistance shall be paid under subsections (1) or (2) unless the railway has reduced the freight rate by an amount equal to such assistance.

4. Subject to these Regulations, the Board may grant financial assistance on the movement of western coal for use by a railway in locomotives to points in Saskatchewan, Manitoba and Ontario, in an amount equal to—

- (a) the difference, as determined by the Board, between the laid-down cost to the railway at designated points of western coal and of such imported coal as would, in the opinion of the Board, otherwise be used, or
- (b) four dollars per net ton.

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5. (1) No assistance shall be paid on the movement of western coal which is classified as Group V in accordance with the "Group" classification of coals established and defined by the Government of the Province of Alberta.

(2) Payments of assistance shall be made in each case to the railway.

(3) No assistance shall be paid under these Regulations on shipments of less than carload lots.

6. (1) Assistance shall be paid only on shipments of coal from a coal mine that was in regular operation under legal permit and was making regular shipments of coal throughout the year 1958.

(2) Notwithstanding subsection (1), in the case of the exhaustion or depletion of a mine described in subsection (1), the Board may, on application by the operator of that mine, grant assistance on the shipment of coal from a mine other than a mine described in subsection (1).

7. (1) Assistance shall not be granted on the movement of coal mined by operators who fail to furnish the Board with such information as it considers necessary for the administration of these Regulations.

(2) All operators, distributors and railways shall permit the Board or its authorized officers free access to their books, records and accounts for the purpose of securing or verifying such information as is necessary for the administration of these Regulations.

ALBERTA AND BRITISH COLUMBIA EXPORT OR SHIPS' STORES

P.C. 1959-369

PRIVY COUNCIL CANADA

AT THE GOVERNMENT HOUSE AT OTTAWA

THURSDAY, the 26th day of March, 1959.

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council, on the recommendation of the Minister of Mines and Technical Surveys and the Dominion Coal Board, is pleased hereby to revoke the Alberta and British Columbia Coal Subsidy Regulations made by Order in Council P.C. 1958-517 of 9th April,

Royal Commission on Coal

1958, and to make the annexed Regulations respecting Financial Assistance on the Export or Sale for Ships' Stores of coal mined in the Provinces of Alberta and British Columbia in substitution therefor, effective for the fiscal year commencing April 1, 1959.

Certified to be a true copy.

(Sgd.) R. B. BRYCE

Clerk of the Privy Council.

REGULATIONS RESPECTING FINANCIAL ASSISTANCE ON THE EXPORT, OR SALE FOR SHIPS' STORES, OF COAL MINED IN THE PROVINCES OF ALBERTA AND BRITISH COLUMBIA

1. These regulations may be cited as the *Alberta and British Columbia Coal Export Subsidy Regulations*.
2. In these Regulations,
 - (a) "Board" means the Dominion Coal Board; and
 - (b) "Coal" means coal mined in the Provinces of Alberta and British Columbia, and includes briquettes made from the said coal.
3. Subject to these Regulations, the Board may grant financial assistance on the export of coal to any country other than the United States of America or its territorial possessions in an amount not exceeding four dollars per net ton, as the Board may deem necessary to permit the coal to be competitive with other coal in that market.
4. Subject to these Regulations, the Board may grant financial assistance on coal sold and delivered for ships' stores for use as fuel by vessels navigating in salt water in an amount equal to seventy-five cents per net ton.
5. Payments of assistance under these Regulations shall be made in each case to the coal mine operator or distributor.
6.
 - (1) Assistance shall be paid only on shipments of coal from a coal mine that was in regular operation under legal permit and was making regular shipments of coal throughout the year 1958.
 - (2) Notwithstanding subsection (1), in the case of the exhaustion or depletion of a mine described in subsection (1), the Board may, on application by the operator of that mine, grant assistance on the shipment of coal from a mine other than a mine described in subsection (1).

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7. (1) Assistance shall not be granted on the movement of coal mined by operators who fail to furnish the Board with such information as it considers necessary for the administration of these Regulations.
- (2) All operators, distributors and railways shall permit the Board or its authorized officers free access to their books, records and accounts for the purpose of securing or verifying such information as is necessary for the administration of these Regulations.

P.C. 1959-405 PRIVY COUNCIL CANADA

AT THE GOVERNMENT HOUSE AT OTTAWA
THURSDAY, the 2nd day of April, 1959

PRESENT:

HIS EXCELLENCY

THE GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council, on the recommendation of the Minister of Mines and Technical Surveys and the Dominion Coal Board, is pleased hereby to amend the Alberta and British Columbia Coal Export Subsidy Regulations made by Order in Council P.C. 1959-369 of 26th March, 1959, in accordance with the schedule hereto.

Certified to be a true copy.

(Sgd.) R. B. BRYCE
Clerk of the Privy Council.

SCHEDULE

1. Section 3 of the Alberta and British Columbia Coal Export Subsidy Regulations is revoked and the following substituted therefor:

3. Subject to these Regulations the Board may grant financial assistance on the export of coal to any country other than the United States of America or its territorial possessions in an amount not exceeding four dollars and fifty cents per net ton, as the Board may deem necessary to permit the coal to be competitive with other coal in that market.

APPENDIX L

COAL PRODUCTION IN CANADA BY METHOD OF EXTRACTION AND PROVINCE 1928 TO 1959

Coal Production in Canada by Method of Extraction and Province—1928 to 1959

(thousand short tons)

	Canada			Nova Scotia		New Brunswick				Manitoba	
	Underground	Strip	Total	Total ⁽¹⁾	% Canada	Underground	Strip	Total	% Canada	Total ⁽²⁾	% Canada
1928	N.A.	N.A.	17,564.3	6,743.5	38.4	N.A.	N.A.	207.7	1.2	—	—
1929	N.A.	N.A.	17,496.6	7,056.1	40.3	N.A.	N.A.	218.7	1.2	—	—
1930	14,268.1	613.2	14,881.3	6,252.6	42.0	206.2	3.1	209.3	1.4	—	—
1931	11,432.0	811.2	12,243.2	4,955.6	40.5	180.9	1.3	182.2	1.5	1.3	—
1932	10,832.8	906.1	11,738.9	4,084.6	34.8	208.7	4.0	212.7	1.8	1.6	—
1933	11,064.6	838.7	11,903.3	4,557.6	38.3	305.1	7.2	312.3	2.7	3.9	—
1934	12,991.4	818.8	13,810.2	6,341.6	45.9	303.2	11.6	314.8	2.3	4.1	—
1935	13,197.3	690.7	13,888.0	5,822.1	41.9	328.1	17.9	346.0	2.5	3.1	—
1936	14,560.2	669.0	15,229.2	6,649.1	43.7	346.1	22.5	368.6	2.4	4.0	—
1937	15,260.4	575.5	15,835.9	7,256.9	45.8	327.3	37.4	364.7	2.3	3.2	—
1938	13,747.1	547.6	14,294.7	6,236.4	43.6	305.4	36.8	342.2	2.4	2.0	—
1939	15,017.8	674.9	15,692.7	7,051.2	44.9	396.0	72.4	468.4	3.0	1.1	—
1940	16,521.0	1,045.9	17,566.9	7,848.9	44.7	445.8	101.3	547.1	3.1	1.7	—
1941	16,961.0	1,264.9	18,225.9	7,387.8	40.5	408.3	115.0	523.3	2.9	1.2	—
1942	17,551.1	1,313.9	18,865.0	7,204.9	38.2	338.0	97.2	435.2	2.3	1.3	—
1943	16,284.1	1,575.0	17,859.1	6,103.1	34.2	274.2	98.7	372.9	2.1	1.0	—
1944	15,184.8	1,841.7	17,026.5	5,745.7	33.7	244.3	100.8	345.1	2.0	—	—
1945	13,925.8	2,580.9	16,506.7	5,112.6	31.0	212.2	149.0	361.2	2.1	—	—
1946	14,488.6	3,323.2	17,811.8	5,452.9	30.6	216.9	153.8	370.7	2.1	—	—
1947	12,247.5	3,621.4	15,868.9	4,118.2	25.9	150.5	194.7	345.2	2.2	—	—
1948	13,404.1	5,045.6	18,449.7	6,431.0	34.9	228.2	294.0	522.2	2.8	—	—
1949	13,705.4	5,414.6	19,120.0	6,181.7	32.3	237.4	303.4	540.8	2.8	—	—
1950	13,283.0	5,856.1	19,139.1	6,478.4	33.8	267.5	339.6	607.1	3.2	—	—
1951	12,805.4	5,781.4	18,586.8	6,307.6	33.9	208.1	445.3	653.4	3.5	—	—
1952	12,009.9	5,569.1	17,579.0	5,905.3	33.6	215.4	527.4	742.8	4.2	—	—
1953	10,551.3	5,349.4	15,900.7	5,787.0	36.4	198.4	522.9	721.3	4.5	—	—
1954	9,842.7	5,070.9	14,913.6	5,842.9	39.2	187.4	593.9	781.3	5.2	—	—
1955	9,424.7	5,394.2	14,818.9	5,731.0	38.7	174.1	703.7	877.8	5.9	—	—
1956	9,393.0	5,522.6	14,915.6	5,775.0	38.7	182.9	805.3	988.2	6.6	—	—
1957	8,602.3	4,586.8	13,189.1	5,685.8	43.1	189.2	787.4	976.6	7.4	—	—
1958	7,419.4	4,267.7	11,687.1	5,269.9	45.1	129.1	661.6	790.7	6.8	—	—
1959	6,567.2	4,059.5	10,626.7	4,391.8	41.3	189.0	814.4	1,003.4	9.5	—	—

Source: Dominion Bureau of Statistics

— Less than 0.05% of Canada total.

— No production.

⁽¹⁾ All production is underground except for the years 1947, 1948, 1949 when strip mine production was 32,050; 91,451 and 1,942 tons, respectively.⁽²⁾ All production is underground.

N.A.—Not available.

Coal Production in Canada by Method of Extraction and Province—1928 to 1959 (conc.)

(thousand short tons)

	Saskatchewan				Alberta				British Columbia				Yukon	
	Under-ground	Strip	Total	% Canada	Under-ground	Strip	Total	% Canada	Under-ground*	Strip*	Total	% Canada	Total ⁽²⁾	% Canada
1928	471.7	—	471.7	2.7	6,941.6	394.7	7,336.3	41.7	2,605.6	199.0	2,804.6	16.0	0.4	—
1929	580.2	—	580.2	3.3	6,830.9	319.8	7,150.7	40.9	2,304.3	186.1	2,490.4	14.2	0.5	—
1930	509.1	70.3	579.4	3.9	5,451.4	304.1	5,755.5	38.7	1,848.1	235.7	2,083.8	14.0	0.7	—
1931	415.6	247.2	662.8	5.4	4,283.7	280.3	4,564.0	37.3	1,594.0	282.4	1,876.4	15.3	0.9	—
1932	640.0	247.1	887.1	7.6	4,522.3	348.3	4,870.6	41.5	1,374.8	306.7	1,681.5	14.3	0.8	—
1933	642.0	285.6	927.6	7.8	4,409.4	309.4	4,718.8	39.6	1,145.8	236.5	1,382.3	11.6	0.9	—
1934	673.4	235.9	909.3	6.6	4,451.7	302.1	4,753.8	34.4	1,216.8	269.2	1,486.0	10.8	0.6	—
1935	679.0	242.8	921.8	6.7	5,044.8	418.1	5,462.9	39.3	1,319.4	11.9	1,331.3	9.6	0.8	—
1936	718.3	302.5	1,020.8	6.7	5,352.9	344.0	5,696.9	37.4	1,489.2	—	1,489.2	9.8	0.5	—
1937	821.1	228.2	1,049.3	6.6	5,252.9	309.9	5,562.8	35.1	1,598.8	—	1,598.8	10.1	0.1	—
1938	811.5	210.7	1,022.2	7.2	4,951.1	300.1	5,251.2	36.7	1,440.3	—	1,440.3	10.1	0.3	—
1939	680.4	279.6	960.0	6.1	5,196.3	322.9	5,519.2	35.2	1,692.8	—	1,692.8	10.8	—	—
1940	545.3	552.2	1,097.5	6.2	5,811.4	392.4	6,203.8	35.3	1,867.8	—	1,867.8	10.6	—	—
1941	581.7	741.0	1,322.7	7.3	6,561.0	408.9	6,969.9	38.2	2,020.8	—	2,020.8	11.1	—	—
1942	536.8	764.3	1,301.1	6.9	7,301.7	452.4	7,754.1	41.1	2,168.5	—	2,168.5	11.5	—	—
1943	718.3	947.7	1,666.0	9.3	7,187.5	489.2	7,676.7	43.0	2,000.0	39.4	2,039.4	11.4	—	—
1944	580.3	792.5	1,372.8	8.1	6,662.3	766.4	7,428.7	43.6	1,952.2	182.0	2,134.2	12.5	—	—
1945	425.0	1,107.0	1,532.0	9.3	6,475.3	1,324.9	7,800.2	47.3	1,699.8	—	1,699.8	10.3	—	—
1946	179.8	1,343.7	1,523.5	8.5	7,000.6	1,825.7	8,826.3	49.6	1,638.4	—	1,638.4	9.2	—	—
1947	314.6	1,256.5	1,571.1	9.9	6,164.4	1,906.0	8,070.4	50.8	1,531.8	232.1	1,763.9	11.1	—	—
1948	168.8	1,420.4	1,589.2	8.6	5,395.9	2,727.3	8,123.2	44.0	1,267.9	512.4	1,780.3	9.7	3.8	—
1949	34.0	1,836.5	1,870.5	9.9	5,672.3	2,944.6	8,616.9	45.1	1,578.7	328.2	1,906.9	10.0	3.2	—
1950	34.6	2,168.6	2,203.2	11.5	5,018.4	3,097.8	8,116.2	42.4	1,480.3	250.1	1,730.4	9.1	3.7	—
1951	20.0	2,203.3	2,223.3	12.0	4,830.7	2,828.7	7,659.4	41.2	1,435.2	304.2	1,739.4	9.4	3.7	—
1952	13.3	2,070.1	2,083.4	11.9	4,506.2	2,688.6	7,194.8	40.9	1,361.4	282.9	1,644.3	9.4	8.4	—
1953	5.4	2,015.9	2,021.3	12.7	3,382.5	2,534.9	5,917.4	37.2	1,167.3	275.7	1,443.0	9.1	10.6	—
1954	5.9	2,110.9	2,116.8	14.2	2,730.2	2,128.8	4,859.0	32.6	1,062.2	217.3	1,279.5	8.8	14.1	—
1955	4.7	2,289.1	2,293.8	15.5	2,349.3	2,106.0	4,455.3	30.0	1,158.7	295.2	1,453.9	9.9	7.0	—
1956	2.6	2,339.0	2,341.6	15.7	2,324.6	2,004.2	4,328.8	29.0	1,098.4	374.1	1,472.5	9.9	9.4	—
1957	—	2,248.8	2,248.8	17.1	1,770.6	1,386.0	3,156.6	23.9	949.1	164.6	1,093.7	8.5	7.7	—
1958	—	2,253.2	2,253.2	19.3	1,273.4	1,246.5	2,519.9	21.5	742.7	106.4	849.1	7.3	4.3	—
1959	—	1,947.4	1,947.4	18.3	1,335.2	1,215.0	2,550.2	24.0	647.3	82.8	730.1	6.9	3.9	—

— Less than 0.05% of Canada total.

— No production.

(*) All production is underground.

(2) For underground and strip, from 1928 to 1945, statistics from the Annual Reports of the British Columbia Department of Mines have been used, adjusted to D.B.S. total production.

APPENDIX M

LANDED IMPORTS OF COAL INTO CANADA BY PROVINCE 1928 TO 1959

Landed Imports of Coal into Canada by Province—1928 to 1959

(thousand short tons)

Royal Commission on Coal

	Canada				Nova Scotia				New Brunswick				Prince Edward Island ⁽¹⁾				Newfoundland ⁽²⁾			
	U.S.	Other	Total	% Canada	U.S.	Other	Total	% Canada	U.S.	Other	Total	% Canada	U.S.	Other	Total	% Canada	U.S.	Other	Total	% Canada
1928	17,036.1	678.2	17,714.3	57.3	33.7	91.0	0.5	89.1	35.1	124.2	0.7	7.8	—	—	7.8	—	—	—	—	—
1929	17,657.0	1,052.3	18,709.3	40.8	59.3	100.1	0.3	120.9	65.7	186.6	1.0	13.9	2.3	16.2	0.1	—	—	—	—	—
1930	16,173.7	1,446.4	17,620.1	48.1	63.8	111.9	0.6	100.6	85.8	186.4	1.0	12.4	3.2	15.6	0.1	—	—	—	—	—
1931	12,467.8	1,064.0	13,531.8	21.0	77.8	98.8	0.7	70.3	51.7	122.2	0.9	4.5	9.3	13.8	0.1	—	—	—	—	—
1932	9,858.8	1,814.7	11,673.5	10.2	93.3	103.5	0.9	41.0	94.4	135.4	1.1	6.0	5.9	11.9	0.1	—	—	—	—	—
1933	9,522.0	1,944.0	11,466.0	8.3	109.8	118.1	1.0	28.2	87.3	115.7	1.0	0.8	4.6	5.4	—	—	—	—	—	—
1934	11,743.7	2,067.8	13,811.5	12.4	106.6	119.0	0.9	45.6	92.0	137.6	1.0	1.2	11.6	12.8	0.1	—	—	—	—	—
1935	10,843.8	2,162.2	13,006.0	7.4	108.0	115.4	0.9	31.0	72.0	103.0	0.8	1.6	7.5	9.1	0.1	—	—	—	—	—
1936	11,732.8	2,002.3	13,735.1	7.5	91.0	98.5	0.7	31.9	95.8	127.7	0.9	1.6	12.1	13.7	0.1	—	—	—	—	—
1937	14,335.0	1,688.1	16,023.1	11.4	104.4	115.8	0.7	34.1	92.2	126.3	0.8	3.7	10.3	14.0	0.1	—	—	—	—	—
1938	11,443.3	1,841.0	13,284.3	9.6	91.1	100.7	0.8	24.4	73.3	97.7	0.7	1.9	9.8	11.7	0.1	—	—	—	—	—
1939	12,445.2	1,439.6	13,884.8	24.0	79.1	103.1	0.7	39.5	65.2	104.7	0.7	4.8	6.1	10.9	0.1	—	—	—	—	—
1940	16,028.5	1,517.6	17,546.1	23.4	85.5	108.9	0.6	30.0	77.1	107.1	0.6	1.4	5.1	6.5	—	—	—	—	—	—
1941	21,112.7	696.2	21,808.9	38.2	97.9	136.1	0.6	51.6	53.3	104.9	0.5	1.7	3.4	5.1	—	—	—	—	—	—
1942	25,220.0	389.3	25,609.3	19.5	103.0	122.5	0.5	34.6	58.4	93.0	0.4	2.3	—	2.3	—	—	—	—	—	—
1943	28,461.2	391.5	28,852.7	59.8	38.8	98.6	0.3	60.7	123.4	184.1	0.6	2.6	—	2.6	—	—	—	—	—	—
1944	28,708.4	218.5	28,926.9	122.2	38.6	160.8	0.5	89.8	168.4	158.2	0.5	4.4	—	4.4	—	—	—	—	—	—
1945	24,560.3	28.4	24,588.7	136.6	2.0	138.6	0.6	81.5	20.3	101.8	0.4	3.5	—	3.5	—	—	—	—	—	—
1946	26,538.3	101.6	26,639.9	118.5	22.8	141.3	0.5	142.6	20.3	171.9	0.6	6.9	—	6.9	—	—	—	—	—	—
1947	30,252.4	53.3	30,305.7	182.1	2.2	184.3	0.6	117.2	0.3	117.5	0.4	6.5	—	6.5	—	—	—	—	—	—
1948	30,715.7	175.7	30,891.4	4.5	32.4	36.9	0.1	1.5	20.0	21.5	0.1	—	—	—	—	—	—	—	—	—
1949	19,530.8	348.8	19,879.6	22.9	48.6	71.5	0.4	0.9	19.7	20.6	0.1	—	—	—	—	—	103.1	9.8	112.9	0.6
1950	26,458.7	411.3	26,870.0	21.3	32.2	53.5	0.2	1.3	1.9	33.2	0.1	—	—	—	—	—	69.8	14.0	83.8	0.3
1951	26,038.7	312.5	26,351.2	16.2	47.6	63.8	0.2	0.6	19.8	20.4	0.1	—	—	—	—	—	29.5	9.8	39.3	0.1
1952	24,071.9	358.3	24,430.2	1.2	43.9	45.1	0.2	0.5	15.6	16.1	0.1	—	—	—	—	—	50.7	6.4	57.1	0.2
1953	22,098.6	319.0	22,417.6	0.4	27.5	27.9	0.1	0.4	7.5	7.9	—	—	—	—	—	—	59.6	10.5	70.1	0.3
1954	18,173.5	254.6	18,428.1	0.9	29.5	30.4	0.2	0.5	—	0.5	—	—	—	—	—	—	70.8	14.7	85.5	0.5
1955	19,143.0	229.5	19,372.5	1.5	22.8	24.3	0.1	0.5	—	0.5	—	—	—	—	—	—	87.7	9.5	97.2	0.5
1956	22,841.0	150.4	22,991.4	0.9	20.6	21.5	0.1	0.4	—	0.4	—	—	—	—	—	—	83.6	4.5	88.1	0.4
1957	19,796.5	140.5	19,937.0	0.4	8.8	9.2	—	0.3	4.3	4.7	—	—	—	—	—	—	56.3	7.0	63.3	0.3
1958	13,261.9	64.0	13,325.9	0.9	6.3	7.2	0.1	1.6	4.7	6.3	—	—	—	—	—	—	22.4	—	22.4	0.2
1959	—	—	13,629.5	—	—	4.7	—	—	—	2.8	—	—	—	—	—	—	—	—	38.5	0.3

Source: Dominion Bureau of Statistics.

— Less than 0.05% of Canada total.

— No imports landed.

(1) U.S. coal "Landed" in other provinces, entering Prince Edward Island, is not included.

(2) Newfoundland entered Confederation on April 1, 1949.

Landed Imports of Coal Into Canada by Province—1928 to 1959—(conc.)

(thousand short tons)

	Quebec				Ontario				Manitoba				Saskatchewan		Alberta		British Columbia			
	U.S.	Other	Total	% Canada	U.S.	Other	Total	% Canada	U.S.	Other	Total	% Canada	U.S.	% Canada	U.S.	% Canada	U.S.	Other	Total	% Canada
1928	2,205.8	586.6	2,792.4	15.8	14,536.1	19.4	14,555.5	82.2	107.1	—	107.1	0.6	3.2	—	1.4	—	28.3	3.3	31.6	0.2
1929	2,073.5	780.8	2,864.3	15.3	15,322.7	44.1	15,366.8	82.1	49.9	—	49.9	0.3	2.9	—	1.3	—	31.0	0.2	31.2	0.2
1930	1,866.7	1,292.6	3,159.3	17.9	14,081.5	—	14,081.5	79.9	33.2	—	33.2	0.2	2.9	—	1.4	—	26.8	1.1	27.9	0.2
1931	1,403.0	922.6	2,325.6	17.2	10,946.9	2.6	10,949.5	80.9	10.7	—	10.7	0.1	1.6	—	0.9	—	8.7	—	8.7	—
1932	878.8	1,584.7	2,463.5	21.1	8,898.9	34.6	8,933.5	76.5	16.3	—	16.3	0.1	1.5	—	0.8	—	5.3	1.8	7.1	0.1
1933	717.5	1,692.1	2,409.6	21.0	8,737.3	26.1	8,763.4	76.4	17.8	1.4	19.2	0.2	1.7	—	1.1	—	9.3	22.5	31.8	0.3
1934	1,068.5	1,820.8	2,889.3	20.9	10,592.1	32.2	10,624.3	76.9	16.9	1.5	18.4	0.1	1.3	—	1.3	—	4.4	0.6	5.0	—
1935	776.3	1,910.4	2,686.7	20.7	10,003.0	60.3	10,063.3	77.4	14.9	1.3	16.2	0.1	1.2	—	1.2	—	7.2	2.7	9.9	0.1
1936	906.7	1,743.4	2,650.1	19.3	10,756.1	58.8	10,814.9	78.7	19.4	0.8	20.2	0.1	0.9	—	1.2	—	7.5	1.8	9.3	0.1
1937	1,495.4	1,445.0	2,940.4	18.3	12,767.3	35.4	12,802.7	79.9	17.1	0.7	17.8	0.1	0.9	—	1.4	—	3.8	—	3.8	—
1938	965.4	1,522.8	2,488.2	18.7	10,420.8	143.6	10,564.4	79.5	13.8	—	13.8	0.1	1.1	—	1.1	—	5.1	0.5	5.6	—
1939	1,702.2	1,179.7	2,881.9	20.7	10,648.4	108.9	10,757.3	77.5	19.3	0.4	19.7	0.1	1.7	—	1.0	—	4.2	—	4.2	—
1940	2,162.6	1,223.3	3,385.9	19.3	13,792.7	126.5	13,919.2	79.3	11.5	—	11.5	0.1	1.8	—	0.8	—	4.2	—	4.2	—
1941	3,950.4	499.4	4,449.8	20.4	17,052.9	41.2	17,094.1	78.4	14.4	—	14.4	0.1	1.0	—	1.1	—	2.2	—	2.2	—
1942	6,387.8	200.5	6,588.3	25.7	18,743.6	27.4	18,771.0	73.3	28.7	—	28.7	0.1	0.8	—	0.8	—	2.0	—	2.0	—
1943	7,364.7	213.2	7,577.9	26.3	20,863.0	16.0	20,879.0	72.4	106.7	—	106.7	0.4	0.7	—	1.0	—	1.9	—	1.9	—
1944	7,451.8	100.8	7,552.6	26.1	21,011.2	10.7	21,021.9	72.7	26.0	—	26.0	0.1	0.6	—	0.9	—	1.5	—	1.5	—
1945	6,187.6	6.2	6,193.8	25.2	18,120.5	—	18,120.5	73.7	26.6	—	26.6	0.1	0.7	—	1.2	—	1.9	—	1.9	—
1946	6,573.6	49.5	6,623.1	24.9	19,664.7	—	19,664.7	73.8	28.0	—	28.0	0.1	0.7	—	1.0	—	2.3	—	2.3	—
1947	7,448.2	47.4	7,495.6	24.7	22,458.3	3.0	22,461.3	74.1	36.6	0.3	36.9	0.1	0.6	—	0.8	—	2.0	—	2.0	—
1948	6,492.3	123.4	6,615.7	21.5	24,134.2	—	24,134.2	78.3	60.7	—	60.7	0.2	0.5	—	—	—	21.9	—	21.9	0.1
1949	3,647.5	270.7	3,918.2	19.7	15,702.3	—	15,702.3	79.0	47.5	—	47.5	0.2	0.3	—	0.1	—	6.1	—	6.1	—
1950	4,871.4	343.2	5,214.6	19.4	21,455.8	—	21,455.8	79.8	35.4	—	35.4	0.1	0.5	—	—	—	3.2	—	3.2	—
1951	4,947.8	235.2	5,183.0	19.7	21,014.5	—	21,014.5	79.7	28.9	—	28.9	0.1	0.5	—	—	—	0.8	—	0.8	—
1952	4,413.0	292.4	4,705.4	19.3	19,568.5	—	19,568.5	80.1	37.0	—	37.0	0.2	0.4	—	—	—	0.5	—	0.5	—
1953	3,370.8	273.5	3,644.3	16.3	18,622.4	—	18,622.4	83.1	43.9	—	43.9	0.2	0.5	—	—	—	0.5	—	0.5	—
1954	2,884.8	210.3	3,095.1	16.8	15,178.7	—	15,178.7	82.4	37.4	—	37.4	0.2	0.5	—	—	—	0.1	—	0.1	—
1955	2,823.5	197.2	3,020.7	15.6	16,197.2	—	16,197.2	83.6	32.2	—	32.2	0.2	0.3	—	—	—	0.2	—	0.2	—
1956	3,536.7	125.3	3,662.0	15.9	19,198.3	—	19,198.3	83.5	30.4	—	30.4	0.1	0.4	—	—	—	0.2	—	0.2	—
1957	2,990.8	120.2	3,111.0	15.6	16,710.9	—	16,710.9	83.8	37.2	—	37.2	0.2	0.3	—	—	—	0.5	—	0.5	—
1958	1,664.7	53.0	1,717.7	12.9	11,524.9	—	11,524.9	86.5	46.8	—	46.8	0.3	0.4	—	—	—	0.2	—	0.2	—
1959	—	—	1,723.2	12.6	—	—	11,829.5	86.8	—	—	30.6	0.2	0.1	—	—	—	—	—	—	—

— Less than 0.05% of Canada total.

— No importations landed.

Note: All imports into Saskatchewan and Alberta are from the U.S.

APPENDIX N

REPORT TO ROYAL COMMISSION ON COAL

By W. V. SHEPPARD

INTRODUCTION

1. In February 1960 I was asked to visit Canada in order to make a review of the coal operations of the various coal subsidiaries of Dominion Steel and Coal Corporation (referred to hereafter as "the Company").

2. To this end I have had discussions with officials of the Company, the Union and others and have made visits to all the coal mines operated by the Dominion Coal Company, Old Sydney Collieries and the Acadia Coal Company. I have also inspected coal washing plants, workshops and coal loading piers.

3. I have taken note of the surface installations at each of the collieries and have made, at each pit, an underground inspection of typical workings. Throughout this field work I have been accompanied by senior officials responsible for coal operations of the Company and by senior officials of the Union. They have jointly assisted me in gathering essential facts during the full discussions following the visits.

4. In all my inspections and discussions, I have had ready and willing help from all concerned and have had full access to any information I required.

5. In the report that follows I shall discuss the mining operations in the Sydney coalfield under their various headings and finally set out my considered recommendations in summary form.

RESERVES

6. The coalfield has been worked for many years. The seams dip to seaward. The field probably extends for many miles out to sea, but ventilation and economics will inevitably prevent more than a proportion of the undersea reserves being worked. The future of the coalfield must be judged by reference to the reserves still capable of being economically worked, and not by reference to the reserves in terms of geological estimates.

MINING (GENERAL)

7. In every colliery where the longwall system of mining is being employed I consider it to be the only appropriate method of extraction and make the point, at the outset, that in these collieries there is no possibility whatsoever

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of the more efficient room and pillar system being employed, either now or in the future. Results can therefore only logically be compared with those of deep mines in other countries where seam conditions are similar and longwall working practised. It is both valueless and quite unfair to hold up the splendid efficiency of coal mining in the United States as an example for these operators to follow.

8. In view of the age of the mines presently at work in the Sydney coalfield, in view of the remoteness of the current underground workings from the shore-based mine openings and in view of the ever-increasing depth of operations, the productivity levels are not of an unreasonable order. That they are capable of improvement I have no doubt, as I shall infer later. Whether coal mining efficiency, under these physical conditions, can ever reach a level such as to enable the coal to be produced at a price to compete directly—on level terms—with alternative sources of fuel supply in the more distant markets is another matter altogether and one I shall deal with in my conclusions.

UNDERGROUND LAYOUT

9. Generally, the pattern is a similar one, pit by pit, with main roadway access to current workings down the full dip of the measures. In this way coal reserves on approximately a three mile "front" are opened up at each pit in such a way that longwall extraction to left and right hand—following the contours—can proceed simultaneously, or selectively, for distances of up to $1\frac{1}{2}$ miles.

10. Here I should make it plain that geological conditions are a very real compensating factor for the underground distances and depths involved, and for the ventilation problems which will become increasingly difficult as extraction is continued. Faulting is virtually unknown, seams are comparatively thick and reliable (there are some local intrusions) and gradients are far from prohibitive. It is because of the reliability of these relatively thick seams that development cost is unusually low for longwall mining and coal faces can be confidently set away for abnormally long periods of time.

11. Now that the Company are in possession of a suitable machine for driving roadways rapidly in the coal in these thick seams, it is a sound idea to attempt to establish longwall retreat mining instead of the more costly and laborious system, presently practised, of longwall advance mining. I consider it likely that the Company will succeed in overcoming the local problems of ventilation and roadway maintenance involved in retreat working. They are certainly wise in setting out to drive face roadways to a straight line and limiting the length of these face roadways to about half the distance involved in the advancing longwall faces.

12. If the present experiment in No. 20 mine succeeds, there is little doubt that retreat mining can make a contribution to increased efficiency in the future—but here I must add a word of caution. First of all, expensive equipment must be obtained beforehand and, secondly, the revised layouts must be properly fitted into the existing pattern of extraction colliery by colliery. Retreat mining is in my opinion, therefore unlikely to make a major contribution to the operations for at least three years and more probably five years.

UNDERGROUND TRANSPORT

13. In following a dipping coal seam for long periods of extraction, a point is reached where bord and pillar working must be abandoned in favour of longwall working. In addition, the problems of transport become more difficult in load and time. Transport difficulties are acute in all except the No. 18 mine in New Waterford.

14. The long and severe mineral hauls in all the mines virtually apply a limiting factor to coalface operations themselves.

15. In this late hour in the lives of these mines, to reorganise the transport is bound to involve tremendous cost and a considerable period of time. The Company have hopes of installing modern trunk conveying equipment in some pits to permit of an even and continuous flow of coal from the working faces to the rail cars. This entails investment on a substantial scale and each project will have to be examined in detail to determine whether it is justified. Meantime, the best will have to be made of facilities as they exist, perhaps with some modest improvements, for some time to come. Certainly the proper quota of underground rolling stock must positively be maintained at each pit and this is not the case at present.

16. Subsidiary—or inbye—haulage systems have been tackled in some part (albeit the effort has been dispersed) by the replacement of rope haulage with diesel locos and in a single instance with a belt conveyor. More remains to be done in the long roadways following advancing faces where rope haulage facilities are currently inefficient.

17. It is one thing to haul coal and stone out of a mine and another thing efficiently to take men and materials in and out of the mine. With some exceptions—and these are receiving or will receive attention—the transport of men is carried out reasonably well under extremely difficult conditions. With such lengthy underground distances involved, effective time at the coalface is all important and, generally speaking, I have found this effective

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time not to be unreasonable. Existing arrangements for the handling and delivery of materials are worthy of further attention, where double handling and/or interruption to coal loading operations occurs.

MECHANISATION

18. The decision was taken ten years ago to concentrate coalface mechanisation exclusively around the Dosco Miner. Results have failed to come up to expectations and this heavy investment in equipment has failed to pay off. On the other hand, it is difficult to judge what the colliery results would have been had the Dosco Miners not been introduced in quantity.

19. With an inclined seam and a relatively soft floor, such as are found in most of the collieries, the Dosco Miner will only cut and load in one direction and therefore output per day is firmly restricted to one cut per coal face. Inherent in the design of the Dosco Miner is the production of much fine coal. Inherent too is a high first cost and a heavy maintenance cost whilst operating.

20. On Dosco Miner faces I found a high proportion of failure to complete the cut in the shift, and even with overtime working to complete the cut within a day. Both features are highly undesirable in mechanised mining and involve heavy cost both in disorganization and indirect wage additions. A failure to complete the cut on one face often brings in its train the need to lose cuts on adjacent faces because of the necessity to keep all faces advancing in line.

21. This trouble has recently been aggravated by the introduction of the "wedge" attachment to Dosco Miners. The Company hope that this new feature will settle down both technically and operationally so that reliable performance can go side by side with increased production of large coal. A close watch should be kept on the actual increase in total large coal output (and not merely the large coal proportion) resulting from the "wedge" attachments.

22. Reasons for failure to complete Dosco Miner cuts within the shift proper are numerous but by far the greatest number of setbacks follow breakdowns of equipment itself and inability of the haulage systems to cope with the tonnage involved within the shift. In particular it is, in my opinion, unfortunate that the loading stations for mine cars, in each level, cannot operate continuously, but on the contrary can operate only intermittently, in some cases with long periods of delay.

23. I feel that the Company should carefully examine the pros and cons of providing more continuous loading facilities (perhaps by some modification

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of both system and equipment) for mechanised faces. These facilities should certainly be provided for retreat faces if maximum benefits are to be obtained. Again I stress the necessity of adequate rolling stock at all times.

24. An efficient and continuous haulage system is an absolute prerequisite to successful coalface operation be they mechanised or not, but, as I have already indicated, although some improvement could be effected, these mines are bound to be limited by the main haulage systems at any rate for some time to come.

25. During the past ten years there have been substantial advances, both in technique and equipment, in other countries committed to the longwall system of mining. A more continuous process has been evolved, with most agreeable increases in daily production per unit, productivity and improved roof control and safety. Greater flexibility of operation can be enjoyed, and costly equipment—involving as it does increasingly high capital charges—can be operated for two shifts instead of one shift per day.

26. Having seen much of the seam conditions in the Sydney field and in spite of the Company being so heavily involved in their own equipment, I feel that they should examine the progress made in other countries in mechanisation, and I shall recommend accordingly—this in spite of the consequential problems of training, outlook and behaviour inseparable from the consideration of new techniques. Certainly on the grounds of efficiency, flexibility and consideration of large coal production alone the recommendation is, I feel, justified. On the other hand I suggest that the Company might consider it prudent to continue to avoid any further expenditure on developing their Low Seam Miner.

MAINTENANCE

27. With daily coal production so bound up with complex and expensive equipment, I consider that nothing less than a comprehensive system of planned, preventive maintenance, fully operated, can properly support these operations. Moreover, a first-class workshop service is not only essential to provide adequate numbers of reconditioned exchange units, but also to give immediate breakdown service and provide complete overhauls on a planned and scheduled routine basis.

28. The Company have gone a long way to these essential ends but they should endeavour—on a planned and controlled basis—to adhere quite rigidly to the replacement of units after specified periods of time or after specified tonnages of coal have been handled.

29. Many of the colliery shops themselves are far from suitably equipped to undertake intricate work. The proper place for such work is undoubtedly at the more modern and better equipped Glace Bay shop. In this shop,

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with the adoption of modern planning and production control methods, an increased volume of work could be put through and I shall recommend accordingly. Some new expenditure on equipment on the shop floor may well be necessary.

30. Before I leave the subject of maintenance of equipment, I must refer specifically to the case of No. 12 mine where only a two-shift system of attendance by faceworkers exists. Without going into elaborate detail, this means that the Dosco Miners (and there are eight of them at work) receive, every other week, wholly insufficient attention. No. 12 is a fully mechanized mine with physical advantages over some of its neighbours yet it is producing disappointing results. The problem of proper daily maintenance week by week should be jointly worked out by the Company and the Union in the interests of all concerned. I shall recommend action on these lines, although I hope that a solution will have been found before the Commission publishes its findings.

COAL PRODUCTION

31. The only coal washing facilities for the Sydney coalfield are at Old Sydney on the western side of the harbour and therefore convenient only for two pits, Princess and Florence. And this plant only washes down to $+4''$, the fine coal being extracted beforehand. On the eastern side of the harbour, where all the other pits are located, there are only ageing picking and screening plants at each pit. Some coal from these pits is now being railed, at great cost, to the Old Sydney washery.

32. The Company have been refused permission to go ahead with their proposed Preparation Plant to deal with the entire output from the pits on the east of the harbour. More modest proposals are, I understand, to be submitted for approval, but these are likely to include plant for the treatment of the fine coal—and its drying—at both Sydney and Old Sydney which will be expensive in itself and expensive to operate.

33. In my own opinion, it is unrealistic to think that this heavy investment can pay off in its own right. Rather is the overall effect likely to be one of additional burden on total operating costs.

34. After the best market advice has been taken, it might be considered unavoidable so to prepare the products. Before a firm decision is reached, however, I would suggest that a careful look be taken at the producing end and discussions held with the long-term consumers of fine coal. With a reasonable and understanding approach at both ends there might (and I put it no higher than this) be an agreeable and sensible compromise by the building of a central screening and picking plant (with blending facilities) instead of a full-scale and high cost washing plant.

LARGE COAL

35. With embarrassing, and growing, stocks of fine coal it is clearly imperative that the Company take every reasonable step to minimise degradation of the coal between the coalface and the rail cars or coal ships.

36. Certainly the Company have endeavoured to solve the difficult problem of making more large coal from the Dosco Miners by the use of the "wedge" attachment—see para. 21. On the other hand, I found no evidence that the numerous other sources of degradation, within the Company's control, were receiving any similar attention. Strict attention, with the help of regular statistics, should be given to the operations, including blasting, on hand-filled walls, to every delivery point and loading point, to the tipplers, the screens and every loading chute. All these are causing varying degrees of degradation.

MANAGEMENT ORGANISATION

37. In recent months the Company have, as a matter of policy, decided to strengthen their supervision in some directions. I have examined the new management structure and find myself in agreement with its aims and purpose. Particularly do I welcome the new posts of Safety Inspectors and Materials Economy Officers at the mines. My own inspections confirm the need for both these additional duties if the right men can be found and if they are given the right backing. I am sure that economy in the use of materials could be obtained. (In passing, and on the joint matter of supervision and safety, I find myself in some anxiety over the value and effectiveness of inspections underground made by Managers, Underground Managers, and Production and Maintenance Supervisors with quite inadequate illumination in their possession.)

38. The general situation is one which demands the closest co-operation between those who produce and those who sell the coal. I appreciate that it may be necessary to have top sales management at Montreal but I am sure that they ought to visit the pits more frequently and that the liaison arrangements should be made to work better.

39. Finally, on the subject of management organisation, I regard the centralisation of many functions associated with coal mining as being quite properly carried out at the Sydney Head Office. Within such a structure, however, the Colliery Manager must not be left without adequate information of where his own pit is going and of policy decisions and agreements affecting the Company as a whole. Only thus can he maintain his status properly in contact with informed persons outside the Company's staff.

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LABOUR RELATIONS

40. Between the Company's senior officials and those of the Union there appears to be a permanent bridge only by way of grievances.

41. I was told that no permanent and positive form of joint consultation exists, and this in a time of desperate anxiety for all those whose livelihood depends upon the state of the Nova Scotia Coal Mining industry.

42. For joint consultation to succeed and really play a responsible and effective part in holding the industry together, there are some rules which Company and Union alike must observe, and there must be a determination on both sides to make it work. Certainly such matters as wage rates or industrial grievances have no place, at any time, on such an Agenda and such consultation cannot flourish if there is any risk of one-sided publicity in a point-scoring atmosphere.

43. I feel that joint consultation, at two levels, should be adopted and made to work, and I shall recommend accordingly. By two levels, I mean a Pit Consultative Committee presided over by the Manager, with appropriate management and Union representation; and a Company Consultative Council presided over by the General Manager with some members of his staff (including District Superintendents) alongside members of the Executive Board of District 26 U.M.W.

CAPITAL EXPENDITURE

44. In coal mining, it is essential to maintain a prudent level of investment to secure continuity of production year by year even at existing rates of efficiency. As the mine extends, additional plant is essential, new tunnels may have to be driven, new roof supports obtained and machinery replaced. Expenditure in this direction, whilst unavoidable, is not all expected to yield a positive return. But, unless the proper level of investment is maintained, the mines deteriorate and results decline. At this time of indecision and lack of resources I cannot feel happy on this score.

45. Again, some desirable projects can mature over a short term of years and prove attractive should the necessary capital be made available. At the moment there is no firm programme of such projects and without them mining efficiency is unlikely to rise more than marginally.

46. As I have already indicated, capital expenditure may be needed to enable the coal to hold on to markets—again without a positive return on the investment. There may be costly schemes involving underground transport and mine ventilation. But in all such cases the useful period of operational

life of the mine concerned is all important, and difficult decisions will confront the Company. I shall recommend that the Company work out, in some detail, their projects for Capital Expenditure within the broad categories I have outlined.

CONCLUSIONS

47. (a) There are immense reserves of coal under the sea, but ventilation—already a difficult problem—and economics are unlikely to permit anything like all these reserves to be worked.
- (b) In spite of the many physical difficulties facing the Company in continuing to operate these old mines and distant workings, some improvement in overall efficiency can reasonably be looked for.
- (c) Uncertainty of future policy decisions and the further postponement of desirable investment will soon have an adverse effect on the operation. Decisions require to be taken now for at least a five-year period on a firm basis and for a further five-year period on an estimated basis.
- (d) Downward movement of production costs should certainly follow more regular completion of face tasks within the working shift proper and a stricter control of materials. Downward movement of production costs would also follow the closure of two high cost mines. Short time working of the more efficient mines is inevitably a costly policy to follow.
- (e) Should these things all be done, there is still scope for a further increase in efficiency following substantial—and maybe desirable—investment in the mines, both above and below ground.
- (f) It is my considered opinion that an overall efficiency level of some 4 tons per manshift for the Sydney coalfield would be a tremendous mining achievement and this level—whilst it may be approached—is unlikely to be exceeded.
- (g) On this premise, and taking into account increasing capital charges on major expenditure required, together with probable rising costs of materials and earnings, I advise the Commission not to expect any downward trend in the pithead cost of these coals.
- (h) On level terms, coal from the Sydney coalfield can never hope to compete with alternative and competitive fuels in distant Canadian markets.
- (i) If the pits are to be kept working and in proper shape and if, as I understand, the Company cannot themselves finance further major investment, then subventions on the movement of coal to

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the markets of Central Canada must continue and the Company will need substantial loans from public funds to finance investment.

- (j) Finally, I must pay my personal tribute to all those who are striving to make a successful operation of coal mines in these conditions and in these difficult times. I know that it requires real courage and unusual determination, energy and skill year by year to grapple enthusiastically with so many and such difficult problems. Assuring the safety of those who work in these mines is a special problem of its own.
- (k) That there is some room for improvement on the lines I have indicated I have no doubt. That all concerned will strive to take up the slack where it exists and as quickly as possible—again I have no doubt.
- (l) The above conclusions refer specifically to the Sydney coalfield. As far as McBean colliery is concerned I comment differently. Here is a small field, somewhat unreliable in localised geology, which should, however, enjoy a reasonably assured economic life for some years to come. In the mine itself I should like to see steel face supports used throughout, a greater concentration of working and continuation of deliberate exploration in advance of the main extraction. The colliery has a reasonably efficient coal preparation plant.

RECOMMENDATIONS

48. I therefore recommend:—

- (i) that firm policy decisions be taken covering the next five-year period with a tentative outline of plans for the following five-year period. To this end the Company should be invited forthwith to submit their forward programme of minor and major projects with estimates of cost and of the effect on operating efficiency, the programme to be set out in a schedule of priorities. A realistic statement of calculated profitability should be included, project by project. Only in this way do I think that the future burden of subventions and loans can be intelligently assessed and only in this way can the mining operations be continued on a sound basis;
- (ii) that the Company take more effective steps to ensure that faces are cleared within the shift and to this end should provide adequate rolling stock in the mines and construct loading stations to permit more continuous running of face equipment;
- (iii) that a fully worked out and controlled system of planned preventive maintenance for machinery be adopted by the Company as soon as

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reasonably possible, and that in the Central Machine Shop at Glace Bay efficiency and throughput be speeded up by means of a modern system of production control and planning;

- (iv) that the Company and the Union give further active thought to the matter of properly resolving the problem of coalface machinery maintenance by three-shift working within the No. 12 mine;
- (v) that the Company give early and positive attention to the whole sphere of coal degradation;
- (vi) that discussions be instituted by the Company and the Union to clear the way for the adoption of joint consultation in the Industry, on a proper footing and on the lines briefly described in para. 43 of this report;
- (vii) that the Company take steps to ensure closer contact between their Coal Sales organisation and the mines and give firmer guidance and direction on the quality of coals to be produced;
- (viii) that a small team comprising—say—no more than two representatives each from the Company and the Union and led by a Mining Engineer representing the Federal Government be set up to spend some time in the coalfields on this side of the Atlantic to assess developments in mechanised longwall operations under conditions reasonably comparable with those of the Nova Scotia coalfields.

(Sgd.) W. V. SHEPPARD

April, 1960

*London,
England.*