Ecoso exchange no. 17 : incorporating Irregular no. 67

ECOSO EXCHANGE No. 17 Summer - Autumn 1978

(Incorporating Irregular No. 67)

Other publications are welcome to use material if source is acknowledged:

It was not for nothing that the original publication was named "Irregular". Subscribers could expect anything at any time. True to tradition, in this issue we want to "put across" to our readers two quite important recent developments in a novel form in conformity with our Ecoso guidlines. ("Eco" for ecological and "So" for sociological).
These developments relate to creating community and conserving energy. The developments referred to are publications of two quite separate groups which have taken giant strides in understanding and presenting some central problems which we believe are of concern to you.

These couple of pages of Ecoso Exchange simply serve as an introductory memo. to the two other considerable efforts, rather than providing our usual analytical articles.

* A Magazine : "Ripple" March 1978 issue enclosed.
* A forth-coming book : "Seeds for Change - Creatively Confronting the Energy Crisis: Information and order form enclosed.

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Ecoso Exchange has a few words to say on "Ripple" and "Seeds for Change" . . . apart from what they say of themselves.

Our Comments on "Ripple"

This newsletter is published by Community Child Care. Hold Hard! Don't jump to the conclusion that this organisation is solely concerned with children's needs. It is concerned with children but it has come to understand that to do a proper job it must spill over into other aspects of urban life.

Newsletter No. 12 is enclosed. Newsletters Nos. 10, 11 and 12 have been issued in a new form, which is impressive enough, but what is still more impressive is the systematic and in depth analysis being attempted. For example -

Issue No. 11 (Dec. 1977) was on the theme "Family and Community Services, Fragmenting or Integrating? Which Way is the Health Department Going?"

Issue No. 10 (Oct. 1977) was on the theme . . "Family and Community Services, How Does the Social Welfare Department Put the Pieces Together?"

Issue No. 12 (as you can read) analyses the Youth Sport and Recreation Department

Issue No. 13 is planned to be on the theme of the Local Government Department.

Issue No. 14 will examine housing and urban planning and the needs of children and their parents.

We suggest that some readers of Ecoso Exchange could contribute articles for these future issues. The editor Frances Floyd 419 - 1148 would no doubt welcome news of such contributions.

Our Comments on "Seeds for Change":

In previous issues of Ecoso Exchange we have welcomed what we described as "the new developments in some conservation organisations to grapple with some of the problems of the built environment when previously their main concern had been the natural environment" (See Ecoso Exchange No.12) We gave examples of how the Australian Conservation Foundation and the Conservation Council of Victoria had set up urban sub-committeess. The enclosed leaflet will give some information on the results of one such sub-committee. The leaflet refers to a team of 12 authors. There were many more than this number involved in the preparation of the book through research assistance, interviews, discussion groups, meetings and seminars.

Readers of Ecoso Exchange have had a foretaste of "Seeds of Change" in the 4-page Learning Exchange broadsheet which was enclosed with Ecoso Exchange 16. In that issue we also referred to the article in Chain Reaction Vol.3 No.1, entitled "From Mobility to Community . . . Restructuring our Cities". Both the Learning Exchange supplement and the Chain Reaction feature article were spin-offs from the preparation of the book "Seeds for Change". Please use the enclosed order form to make your purchase.

GOVERNMENT SETS ENERGY DISASTER COURSE:

The Federal and State Governments are reported to be on the verge of decisions involving a massive investment in oil-from-coal plants which would cost more than $3,000 million - 3 of them at $1,000 million each. (But, surely, $1,000 is an underestimation of cost?) On 22. 2. 78 Premier Hamer announced a $3 million feasibility study was about to be signed between the following governments . . West German, Australian, Queensland, N.S.W. and Victorian, and a consortium of West German companies. Hamer should be urged to pull Victoria out of this project immediately. According to a research team of the Conservation Council of Victoria (Conservation of Urban Energy Group) any attempt to use brown coal for electricity or for town gas (when natural gas supplies begin to dwindle) and also to make oil (when Bass Strait oil supplies start to decline), will result, within a bare two decades, in brown coal itself being in short supply, if all present trends continue. This estimate would seem to be pretty near the mark. The Liquid Fuels Working Com. of the Institue of Engineers have estimated that known reserves of easily mined coal most suitable for pyrolysis and hydrogenation would only provide 50% of our liquid fuel needs for 25 years; and this is not counting the coal needed for electricity or for export.

The main news of the oil from coal plant appeared on page 17 of the Melbourne Age (23. 2. 78). On the same day the page 1 headline was "Let's Save Energy: Hamer." Under this front page headline we read about Hamer as an energy hero decreeing that 25% of government cars should be 4-cylinders instead of 6-cylinders and that government officers should have windows that open to cut down on air-conditioning energy, and foreshadowing measures for insulating new homes.

All to the good! But it should be appreciated that measures such as these have a marginal effect on energy growth rates. For some years Ecoso Exchange has been advocating a thorough-going programme of reducing energy use, including restructuring the consumerist, car-dependent - city life-style into a better people-involving style of city life.

FOR YOUR INFORMATION:

* Seminars on the theme "Work for All? Its purpose, its nature, its possibility" will be held this year in Melbourne and Sydney. At a recent Council meeting of the Australian Conservation Foundation Jack Mundey was elected as convenor of the new organisation. . . Environmentalists for Full Employment. This coalition of unionists, environmentalists and others will be working to fight for full employment and linking this with the need for all work to be performed for the benefit of the community. One of the first steps to initiate this movement will be the seminars. For further information: The 1978 Autumn issue of Chain Reaction (available from Friends of the Earth, 51 Nicholson St., Carlton 3053, for $1 a copy) will feature articles on women ecology.

* The May issue of the Journal of the Royal Australian Institue of Planners. (Available from R.A.P.I. Box 541, Nth. Sydney, 2060, price $3. 00) will feature a number of articles on women and children and planning

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If you are not a subscriber to Ecoso Exchange . . . or if you wish to renew your subscription please send $4. 00 to Box 87 Carlton South 3053. For further information on Ecoso Exchange phone 328-2345.

Did you get a copy of the National Times Supplement on Housing and Urban Planning? It was published in April. If you missed out there may still be time to get your copy.

VIEWS OF A WORKER IN THE ENERGY INDUSTRY

-by Mr Vern Moffitt, Lithgow. N.S.W.

"Fraser and Anthony vigorously advocate the unrestricted sale of Australia's minerals by multinationals to multinationals as the means to buy things from multinationals like manufactured goods and petroleum."

"In the long run, when the minerals run out, we will have not only no minerals, but no manufacturing industry either!"

From a letter by V.Moffitt Lithgow Mercury June '78. Mr Moffitt proposes below some alternative policies.

Name of Game: Escalating Energy Production

The energy question with all its far reaching ramifications will become, not potentially or possibly, but in fact, one of the most important issues we will have to tackle.

The first manifestations of an energy crisis for us in Australia will clearly be in the supply of petroleum.

Whilst there is a continuing, unabated increase in consumption at about 6% p.a. excepting the discovery of significant new oil reserves, our indigenous oil supply will begin to decline in less than 2 years and run out in 10 years.

The bill for importing petroleum is expected to rise from about $700 million per annum to $2,500 million in 1985. This last guesstimate is clearly assuming that the US and others can continue to exercise pressures on the OPEC countries to keep prices within "acceptable" limits and nothing happens to affect the "availability" of petroleum. In any case, world reserves of petroleum are being rapidly depleted and all the developed capitalist countries are working feverishly at the question of how they are going to cope.

For Australia, if the good news is that by the rational application of known technologies to our known resources and the rational readjustment of our patterns of consumption we could coast through this problem without the slightest trauma - the bad news is that there is no way that that is the way it is going to happen.

On the contrary, in our modern capitalist countries, since the production and sale of commodities for a profit is the name of the game, restrictions on the escalating production and consumption of the commodity energy would have to be a last resort. Similarly the ongoing development of the means of production to be less labor intensive, more capital intensive, almost always means more energy intensive.

The "normal" interest of big companies in cornering the supply of commodities, especially essential commodities, has lead them to rapidly move into the principal alternative to petroleum as perceived at this time - that is, coal. For instance in the last two years every open market coal mining company in the Western District of N.S.W has taken on an oil company partner.

The domination of our imported and domestic supplies of petroleum and natural gas by foreign oil companies, the dominant position of multinationals in black coal, the moves by the Japanese consortium Kominic and Rio Tinto into brown coal and complete foreign ownership of our chaotic motor car industry combine to give us an iron-clad guarantee that the impending energy crisis will exacerbate existing problems for Australia, create new problems including advancing Australia further into the grip of the multinationals.

Policies are being formulated and pursued by Federal and State Governments in clear response to pressures from the multinational energy interests which strengthen and give further impetus to their bid for total control of our resources not simply with the blessing of Government but with most substantial support from public funds.

Subsidies for oil exploration, the lifting of the price of indigenous oil, the removing of the export levy on coal, the "naturalisation" of foreign companies, Wran's incredible guarantee to prospective American investors against expropriation, his over-ruling Hills on the Warkworth leases and the prospective deal on oil from coal with the West Germans which involves a number of States - all these and many more are part of the game as it is being played.

N.E.A.C And Multinationals

If you take a look at the Federal Government's new-look National Energy Advisory Committee (NEAC), whom do you find sitting amongst a respectable group of public servants, academics and Harold Souter?

The Chairman Mr. G.J. Lynch is a former Director of ESSO whilst members include the Executive Director of ICI; Chief Economist of the ANZ Bank; the General Manager of North Shore Gas; General Manager (coal) BHP; and Dick Austen, Chairman of the NSW Colliery proprietors and Chairman of Austen and Butta in which company Shell Oil recently acquired a 37½% interest and is engaged almost exclusively in the export of steaming coal.

There are few grounds to hope that the advice offered by this Committee will include measures which impinge on company profits or restrict foreign control of our resources.

The Fraser/Anthony formula to solve the energy question appears to consist of - subsidies and incentives for oil exploration; massive exports of minerals including uranium, coal and natural gas to pay the escalating bill for petroleum exports and assistance as required for foreign companies to establish oil from coal projects as and when they get around to it.

This policy, along with the current dismantling of much of our secondary industry will create a position of substantial physical dependence of Australia on the "goodwill", if you like, of foreign oil companies.

Well over 90% of Australia'a transport relies on petroleum. If all imports of oil were cut off at this moment we would probably get by with a bit of nifty foot work to replace the oil used in industry with coal, natural gas, coal gas and electricity and a bit of "is your journey really necessary?" type petrol rationing. With a diminishing indigenous supply and increasing petroleum consumptic that possibility also diminishes.

In this context it might be worth remarking that when the Zig Zag historical railway trust tried to get a N.S.W. steam locomotive about 2 or 3 years ago they found they were unobtainable - they had virtually all been broken up for scrap !!

Alternatives to Abject Energy Dependence

I feel that this question of petroleum dependence is a matter of first rate importance involving the question how much of what is to be exported and who gets the gravy.

One quarter of all petroleum used in Australia, a large part of it being imported heavy middle East crude goes into industrial boilers and furnaces. Recent developments with fluidised bed combustion applied to boilers by Babcock Wilcox in England make the conversion from oil firing to coal firing technically, economically and environmentally feasible.

In the absence of an Australian boiler and furnace industry, there is a case for, say, the NSW Government to establish one and sell the coal to fire them.

The production of oil from coal is currently being presented by the establishment as something necessary but dependent upon foreign capital and not at present competitive with petroleum - whatever that means. With lead times of from 8 to 10 years from the drawing board to production for these magical multi billion dollar projects alleged to be the only economical way to do it, we would be clearly in a position of abject dependence long before it happened.

There are alternative known technologies enabling a far quicker "getting this show on the road" utilising existing public utilities as a base such as hooking a Fischar Tropsch plant onto the Morwell gas works - setting up a flash pyrolysis plant and refinery in collaboration with the N.S.W State Electricity Commission.

Many of these questions already occupy some of the thinking and activities of workers and unions - there's a hell of a lot more to do !

Already established movements around public transport explicitly include attention to the dependence on petroleum, the private car and the private truck.

Whilst expanded electrification of the railways is seen as an obvious step forward, various technological developments appear to offer the prospect of new highly efficient coal burning locomotives - all of which is worth looking at.

So one necessary component of a transition to energy independence is the activity of railworkers and community groups who want better public transport, and miners and powerhouse workers who want rational use of the energy resources they handle.

ENERGY SHORTAGES - THE PATH TO HIGHER UNEMPLOYMENT?

This talk directly relates to the very responsible decision your organisation made last Thursday night on becoming involved in social issues and the future problems that will directly arise from shortfalls between supply and demand for liquid fuels (Crude Oil), the effects of which are going to greatly speed up industrial and social restructuring and create very much higher unemployment and further disadvantage those who are already badly disadvantaged.

The potential of the shortfall between supply and demand can be illustrated in the following quote from the Joint Foreign Affairs and Defence Committee in a Report to Federal Parliament entitled "The Middle East" AGPS 1977:

> "Although it has been difficult for the Committee to obtain precise information about the quantitative effects on the Australian economy of an interruption of Middle East oil supplies, the Committee was provided with an appraisal of the unemployment effects. It was estimated that if supplies of Middle East oil to Australia were interrupted for more than three months Australia would suffer an additional half a million unemployed. In the more conceivable event of a partial reduction of heavy oil supplies (as suffered by some countries in 1973) the estimate of extra unemployment would be reduced (to 500,000 persons) in proportion to the cuts in Australia's allocation."

60% of Australia's liquid fuel requirements are currently provided by the Bass Strait Oil and Gas fields and this supply is expected to start to decline in production in 1980-81. It will decline at such a rate that the field will only be supplying 30% of our needs by 1985. The remaining 70% will have to be supplied from overseas sources with the great majority of Crude coming from the OPEC group of nations. Even if we find a Bass Strait size oil field tomorrow, it will be some 5 to 8 years before it will make a contribution to our oil supply situation.

There are 2 important influences on our source of supply -

1) The multi-national oil companies - who buy and distribute crude oil on a world-wide basis from the OPEC group of nations. The 7 sisters (that is the 7 major oil companies) showed their influence during the 1973-74 oil crisis when a large majority of oil tankers were diverted to the U.S.A. and nations like Japan suffered from very severe shortfalls in supply due to these actions.

2) The Australian Government's Foreign Policy is naively based on the belief that a strategy of building trade with OPEC nations will ensure supply of crude oil. The main trading emphasis is on primary products (wheat, sheep, uranium, etc.) and as a result of this policy Australia will supposedly continue to receive oil during any period when dislocation of supply occurs. (The current estimate is that companies have a maximum of 30 days supply).

The latest Department of National Resources' forecast (April 1978) is for a growth in consumption of 2.67% per annum to the year 1987 which will increase our 1976/77 consumption level of 644,836 barrels per day by 161,200 barrels per day (approx. 25% increase in 10 years(Note 1)) and if the trend of 2.67% growth is continued after 1987 then we will double oil consumption by the year 2006-7 some 30 years from now.

The National Resources forecasts make 4 important assumptions:

(a) Rate of Economic growth
(b) Future energy prices are held relatively constant
(c) Availability of energy supplies
(d) Trends in Energy Technology.

We need to briefly examine 1 of these assumptions - the availability of energy supplies from overseas (OPEC) nations.

Several Organisations have started to address themselves to this question, namely the Central Intelligence Agency, Institution of Engineers, Committee for the Economic Development of Australia and the Institute of Public Affairs.

The last 3 organisations predict major social and economic problems for Australia if supplies are not available during and after the decline in production from the Bass Strait oil and gas fields.

A brief analysis of the world energy picture shows the following trends:

1) The developed nations of the world still have a commitment towards increasing their oil consumption - The International Energy Agency (June 1978) (I.E.A.) makes the following estimate:

Table 1	1976	1985	1990
Net Oil Imports for IEA nations million barrel/day	22.3	29.2	33.6

(Australia is not included in these figures)

Table 1 illustrates that the demand from the International Energy Agency is expected to increase by 11.6 million barrels/day (a 17% increase in 14 years) whilst the production capacity of Bass Strait, North Sea and the great majority of USA oil fields including Alaska are expected to reduce their productive capacity quite rapidly. These 2 factors, the increase in demand and the decline in well productivity are gong to force greater dependence on the OPEC nations. Saudi Arabia is the only nation among the OPEC group who has the reserves and capacity to oncrease production by the level required to meet the demand. It is also important to note that the OPEC nations have very small reserves of other non-renewable resources so after the decline of their oil and gas reserves they have to rely on imports.

Note 1:

The reason for the further increase in consumption between 1987 and 2007 is due to the cumulative effects of compound growth.

Both the CIA and Institution of Engineers of Australia estimate that there will be a short term glut of oil then as the growth in demand continues, major shortfalls in production in the mid 1980's as the OPEC nations start resource conservation programs (the major members of OPEC non-renewable energy reserves are Oil and Gas, whilst a majority of IEA members have large Coal reserves and small oil and gas reserves. Another case of the developed world exploiting non-renewable resources from 3rd world countries.)

The Conservation of Urban Energy group of the Conservation Council of Victoria has compiled the most probable energy availability for Australia using the Royal Commission into Petroleum 5th report as a basis.

Figure 1 shows the likely demand pattern, the low demand projection relates to the current Department of National Resources forecast, whilst the possible production forecast from Bass Strait includes all the new fields recently announced (Cobin & West Kingfisher).

The latest find announced by BHP Esso on the extension to their fields of 125 million barrels is only the equivalent to six months national consumption at current consumption levels and will make very little difference to this figure.

Figure 1

Australian Crude Oil Production, Imports and Demand

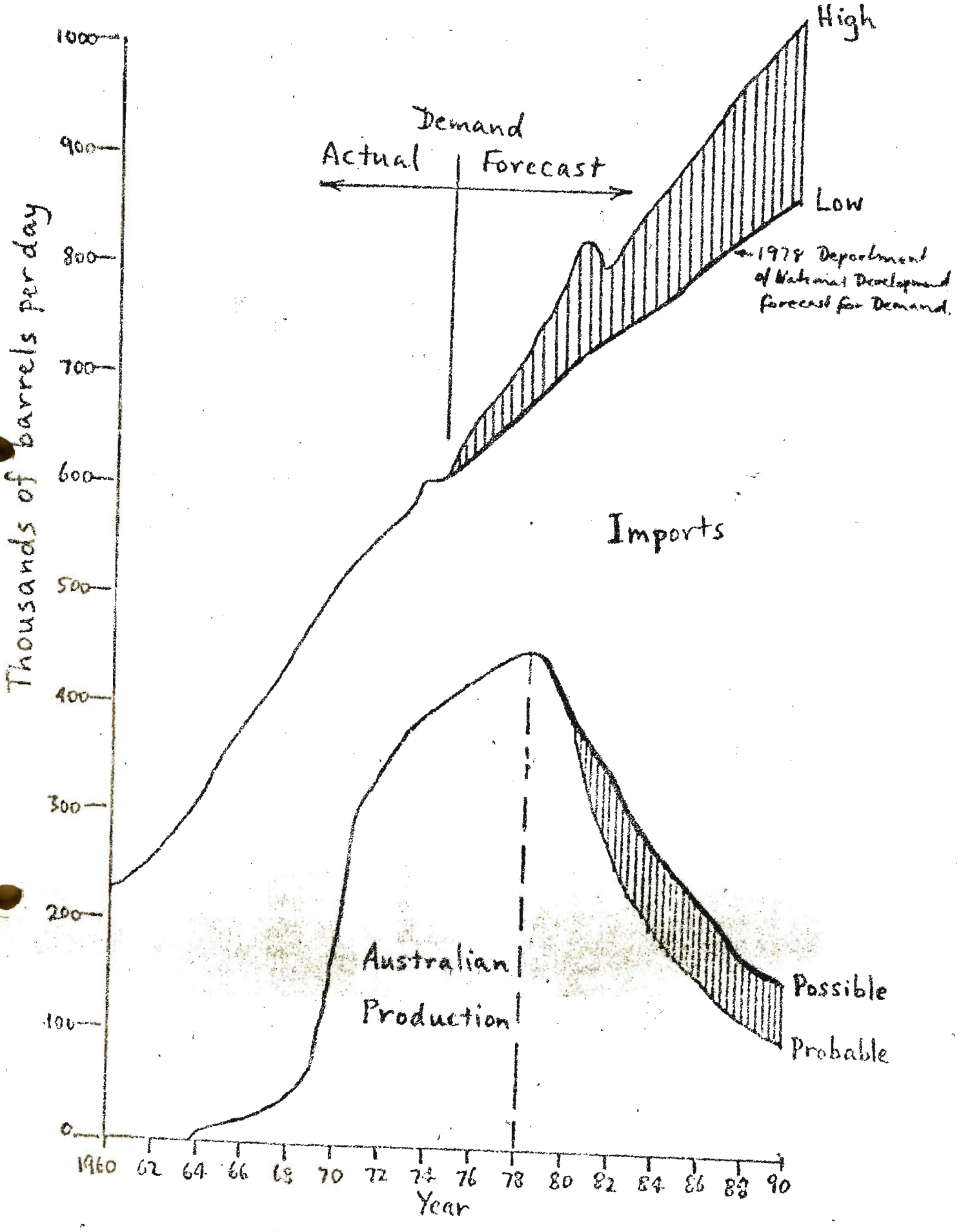


Figure 2 illustrates the forecast import requirements of Crude oil. The most likely probable requirement is the low forecast based on the Department of National Resources demand forecast. However, the CUE/CCV assessment of the most likely availability, based on the current information of OPEC intentions available to us, is very much lower than this requirement, due to the demands of U.S.A., Japan and Europe and our increasing Balance of Payments problem. The current Federal Government strategy to offset these problems of reduced availability of oil is to be a nett exporter of Coal, Iron Ore and Uranium to reduce the financial impact of the oil payments in the 1980's, and to increase trade with the OPEC nations to increase their dependence on Australia for raw materials to ensure supply of oil.

Figure 2

Australian Crude Oil Import Requirements and Probable Availability

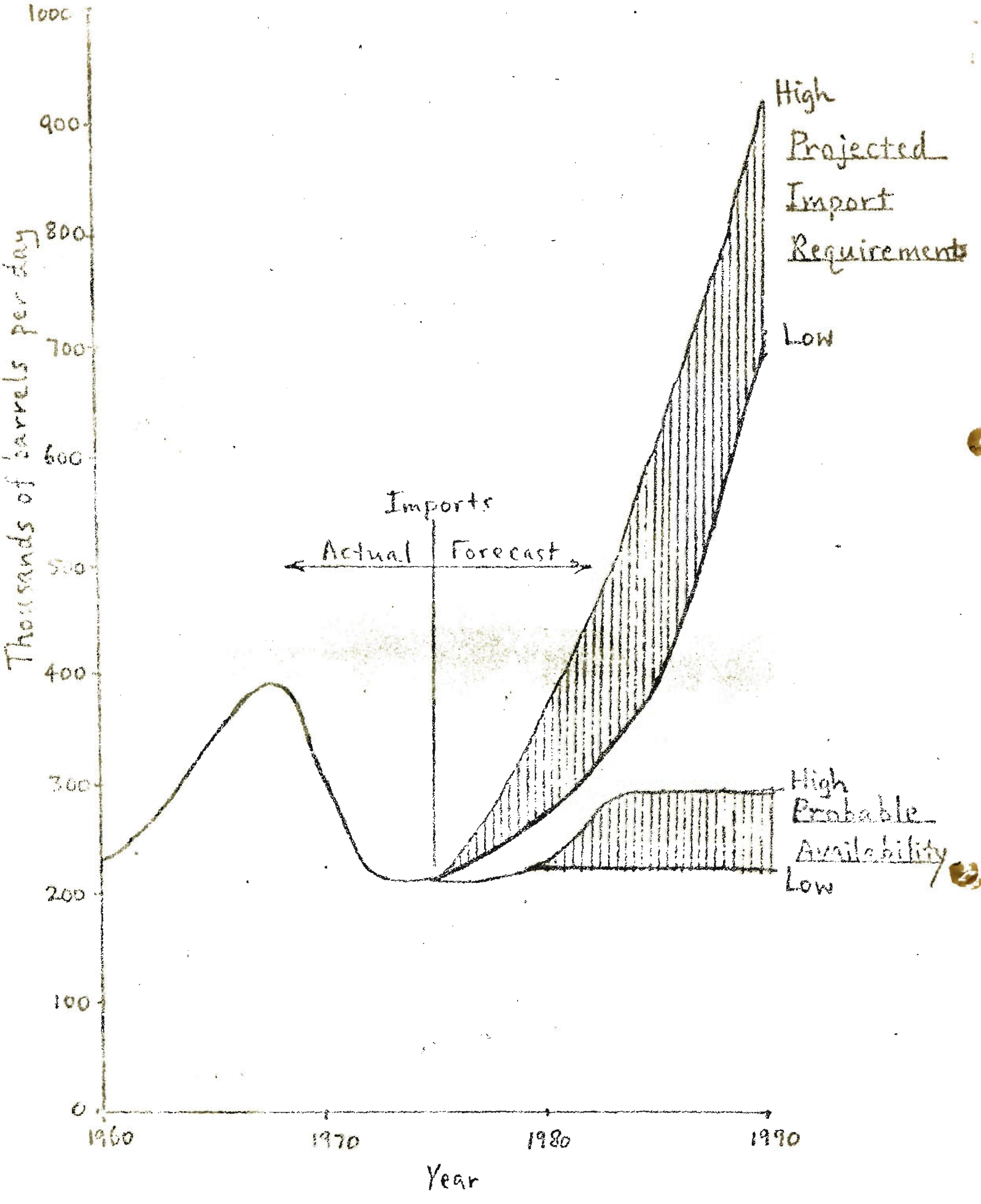


Figure 3 illustrates the most likely Demand and availability of Crude Oil for Australia and has been obtained by adding the CUE/CCV estimates on supply availability to the Bass Strait production. It can be seen that there is a huge discrepancy between demand and availability. Whilst there is some awareness of this problem in official circles there is great reluctance to act which is illustrated by our national energy policy based on using the pricing mechanism and some "band aid" conservation measures yet to be implemented.

The 2 most common responses by most people including governments to the issues of energy policy are (a) we will find more, and (b) we can convert coal to oil.

It is important to examine these 2 propositions because they do not stand up to close scrutiny.

a) Firstly, Bass Strait, a relatively large oil field of at least 3000 million barrels, will effectively last for some 12 to 15 years. We would need to find another field or group of fields of the same size as Bass Strait to maintain the supply situation at present levels.

M. King Hubbert of the U.S. Geological Survey developed a typical oil production diagram for the World. Several important points can be made from his model which is used as the basis of Figures 4, 5 & 6.

1) If demand increases at a compound growth rate, then demand will exceed supply after approx. 1/3rd of the resource has been consumed.

2) A peak in production will occur after ½ of the oil is consumed, which is approx. 1 doubling time after supply deviates from demand i.e. 1/3 production.

Table 2 illustrates the relationship between doubling time and percentage compound growth.

% growth (or Interest)	1	2	3	4	5	6	7	8
Doubling Time Years	70	35	23	18	14	12	10	9

3) Doubling the resource only marginally increases the life of the resources. Figure 4 illustrates this point rather well, Hubbert has calculated the life of oil reserves for 2 different resource sizes: increasing the resource size by 50% gives another 6 years duration before 80% of the resource is consumed. Illustrated in Figure 4.

4) If conservation of the resource occurs after 1/3 of the resource is consumed the- it makes very little difference to the life of the resource as illustrated in Figure 5.

b) Coal to Oil is offered as the other major solution to the problem of Liquid fuel shortages. The only serious attempt currently being made internationally to operationalize this solution is in South Africa, where a project called the SASOL1 plant has been established, this system has an overall plant efficiency of approx 3% and produces less than 5% of South Africa's liquid fuel needs. SASOL2 plant, the latest South African project,is designed for an overall plant efficiency of 50% but will still only produce approx. 10% of South Africa's needs for Liquid fuel at considerably higher costs than for oil at current prices. High efficiency technology doesn't exist in a viable form currently anywhere in the world. The first U.S. large scale pilot plant COALCON was abandoned without ever being commissioned at an expenditure of U.S. $15M. Efficient conversion technology still has to be developed and then some 10-15 years will be required to scale the technology up for full size plants. If the entire Australian consumption was to be supplied, then using 2.67% growth in consumption some 1 million barrels/day of crude oil would be required.

To this commitment of coal we would have to add the commitment of electricity generation and the coal to be exported.

CUE/CCV have examined some of the options currently proposed for Victoria.

Figure 3

Projected Australian Crude Oil Demand And Likely Availability

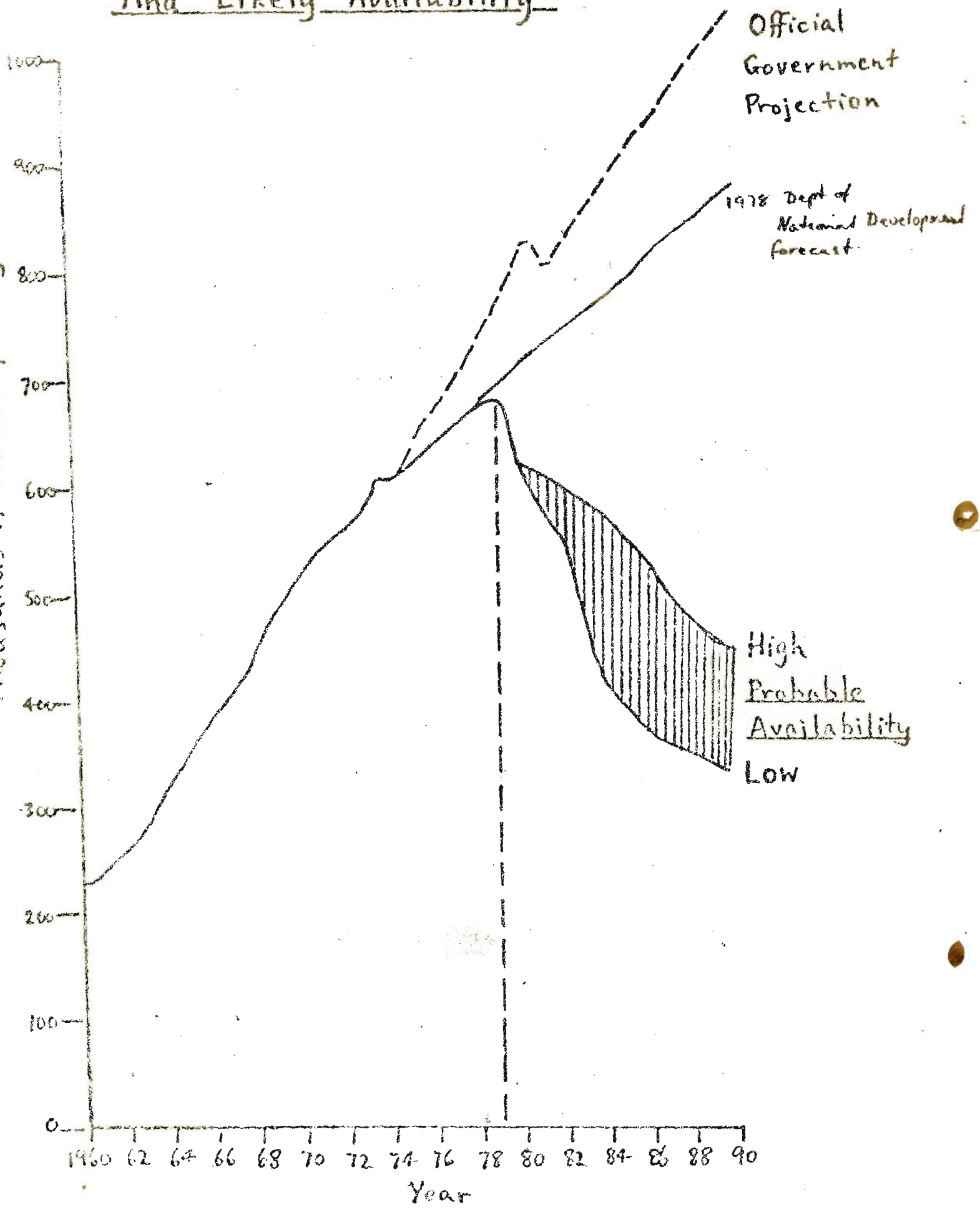


Figure 4

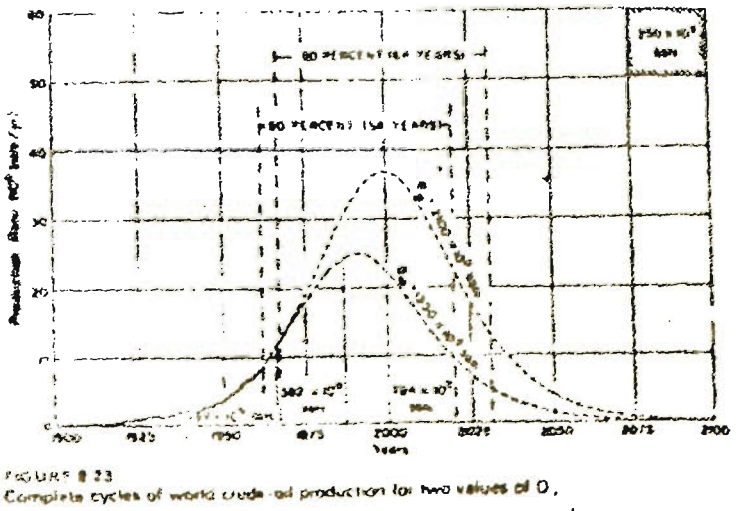


FIGURE 8.23
Complete cycles of world crude-oil production for two values of Q.

Figure 5

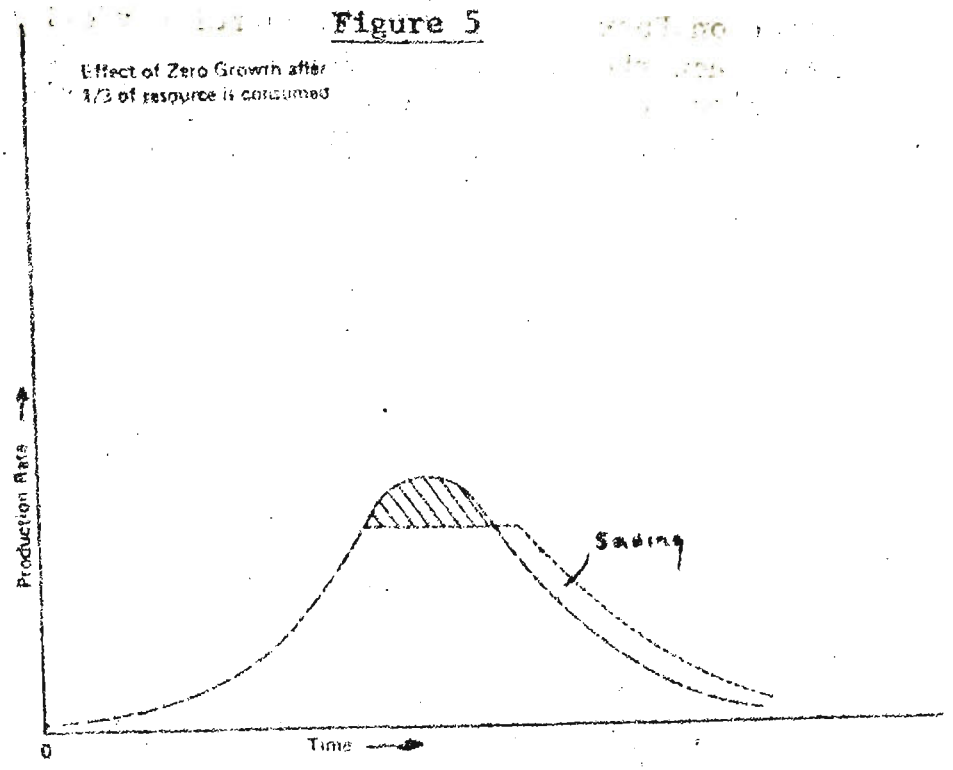


Figure 6 illustrates the commitment of brown coal to electricity generation based on a 6.6% growth rate in consumption (SEC V's estimates) - Note how the readily economic recoverable reserves of 12,200 m tonne resource gives a peak after 44 years, whilst the economic recoverable reserves (with foreseeable improvement in mining technology) of approx. 30,000 m tonne peaks in 57 years whilst the geological proven reserves of approx. 60,000 m tonne would peak in 69 years.

Figure 6

Likely Effects of Increasing Reserve Size On The Rate Of Brown Coal Producting in Victoria

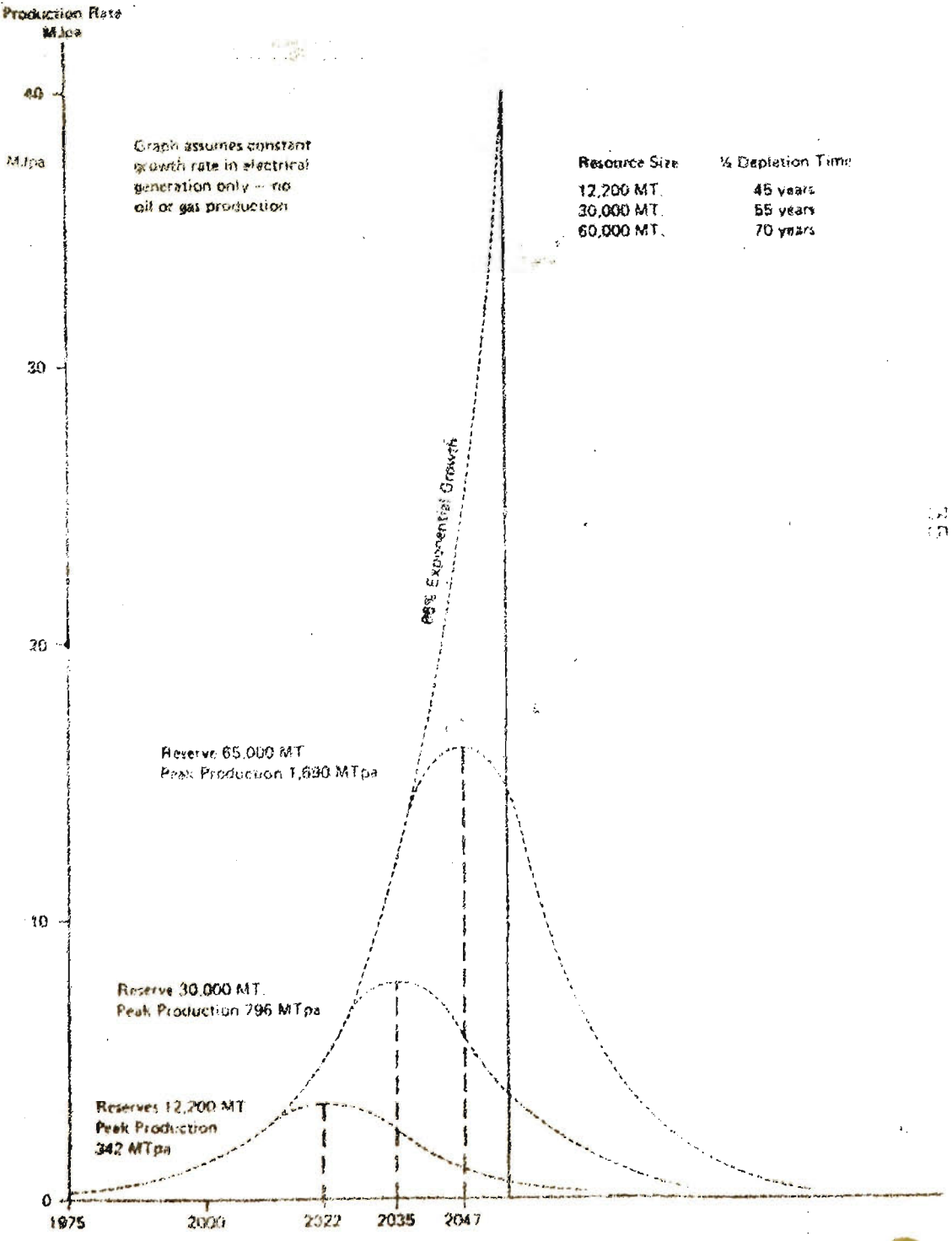


Figure 7 illustrates the impact of the proposals as presented in the Victorian Government's Green Paper on Energy of a 100,000 barrel/day oil from coal and a coal to gas plant. Note how the peak production is brought forward to 2006 from the year 2002 revealed in previous figures. Quite clearly the proposition that Victoria has hundreds or thousands of years of coal is quite untenable.

Figure 7

Life of the 12,200 m tonne brown coal reserves with commitments to a 100,000 bbls/d coal to oil and coal to gas plants starting in 1985.

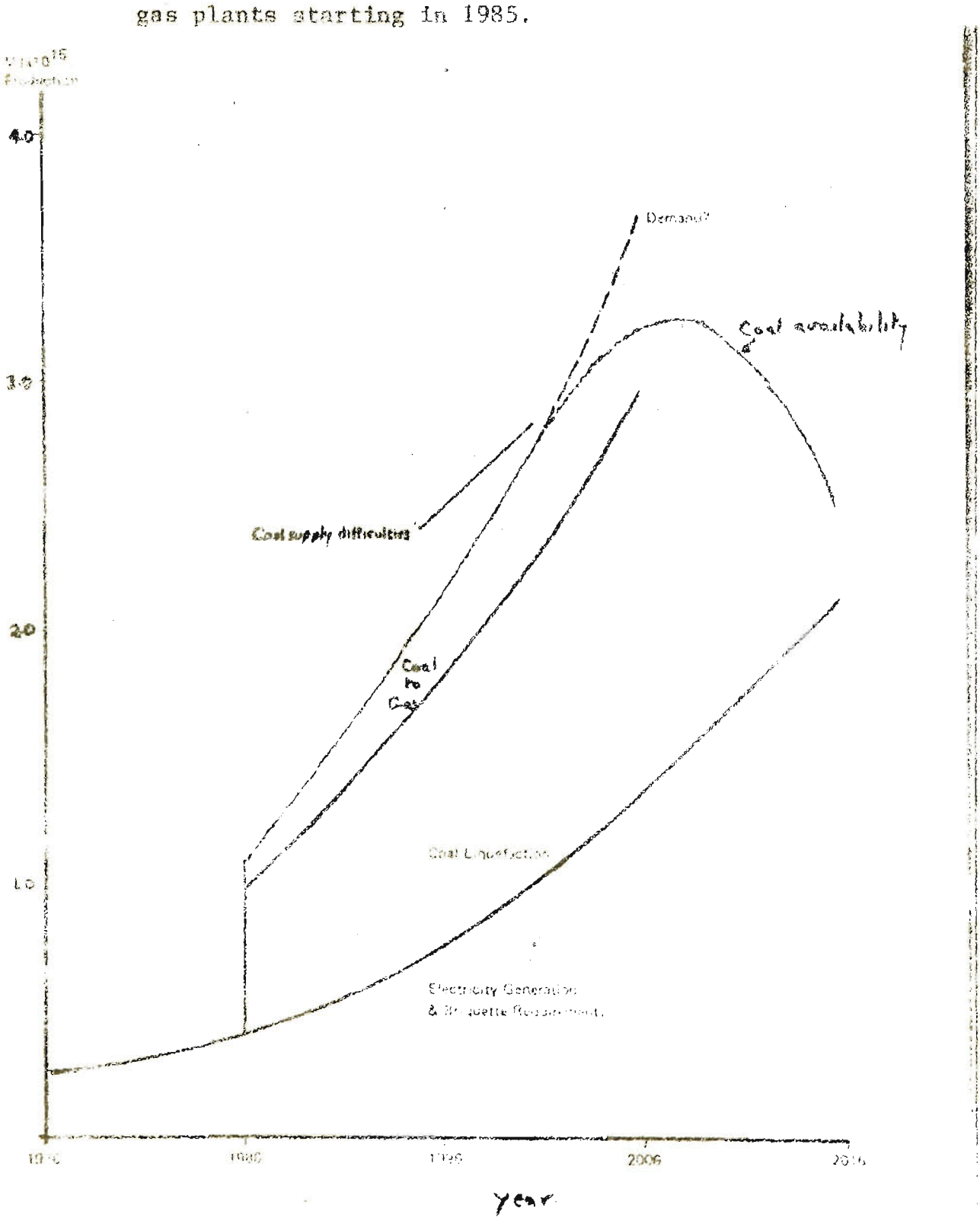


Table 3 gives a number of estimates of the resource life and their method of calculation for Brown Coal.

Table 3

Various Estimates as to the Life of Victorian Brown Coal Resources

Source	Life of Resource	Method of Calculation
Prince & Nucifora	3,500 years	Resource divided by current consumption level.
D. W. George	1,000 years	" "
Ranger Environment Inquiry	444 years	" "
Department of National Resources Solar Energy.	Some hundreds of years	" "
Conservation of Urban Energy		Hubbert calculations 6.6% growth rate. Electricity generation only
	45 years for	12,200 m Tonne
	58 years for	30,000 m Tonne
	71 years for	60,000 m Tonne
		Coal to oil, coal to gas and electricity generation.
	29 years for	12,200 m Tonne
National Energy Advisory Comm. (NEAC)	1,300 years 1,000	at 1975/76 consumption levels. at 1984/85 consumption levels.

NEAC suggest that potentially 300 years of brown coal will be consumed in 9 years.

The same sort of table can be readily constructed for black coal. The final common assumption is that any problem in coal production or supply difficulties can be obviated by a switch of the electric generation system to nuclear power. The proposition that Australia is an energy rich country is dependent on the way non-renewable resources are exploited.

Clearly maintaining growth in energy consumption is leading to rapid non-renewable resource deflation. Both the Victorian and Federal Governments are unable to come to grips or are prepared for anything about the problem.

The picture for Natural Gas is also interesting. The CCV/CUE interpretations for the problem are illustrated in two different scenarios. (A) Figure 8, the Gas and Fuels forecast from the Chairman's address to shareholders 1977 which shows problems occurring in delivery ability in 1955 and Newport and Jeeralang A&B gas turbines bringing forward this date by 1 - 3 years. (B) Figure 9, is an extrapolation of a 10% growth rate in gas consumption, (Last year's consumption growth rate was 14%) and shows the impact of the Gas turbines and Newport on the problem in supply - this figure is based on the Victorian Government's Green Paper Energy High growth scenario.

Figure 8

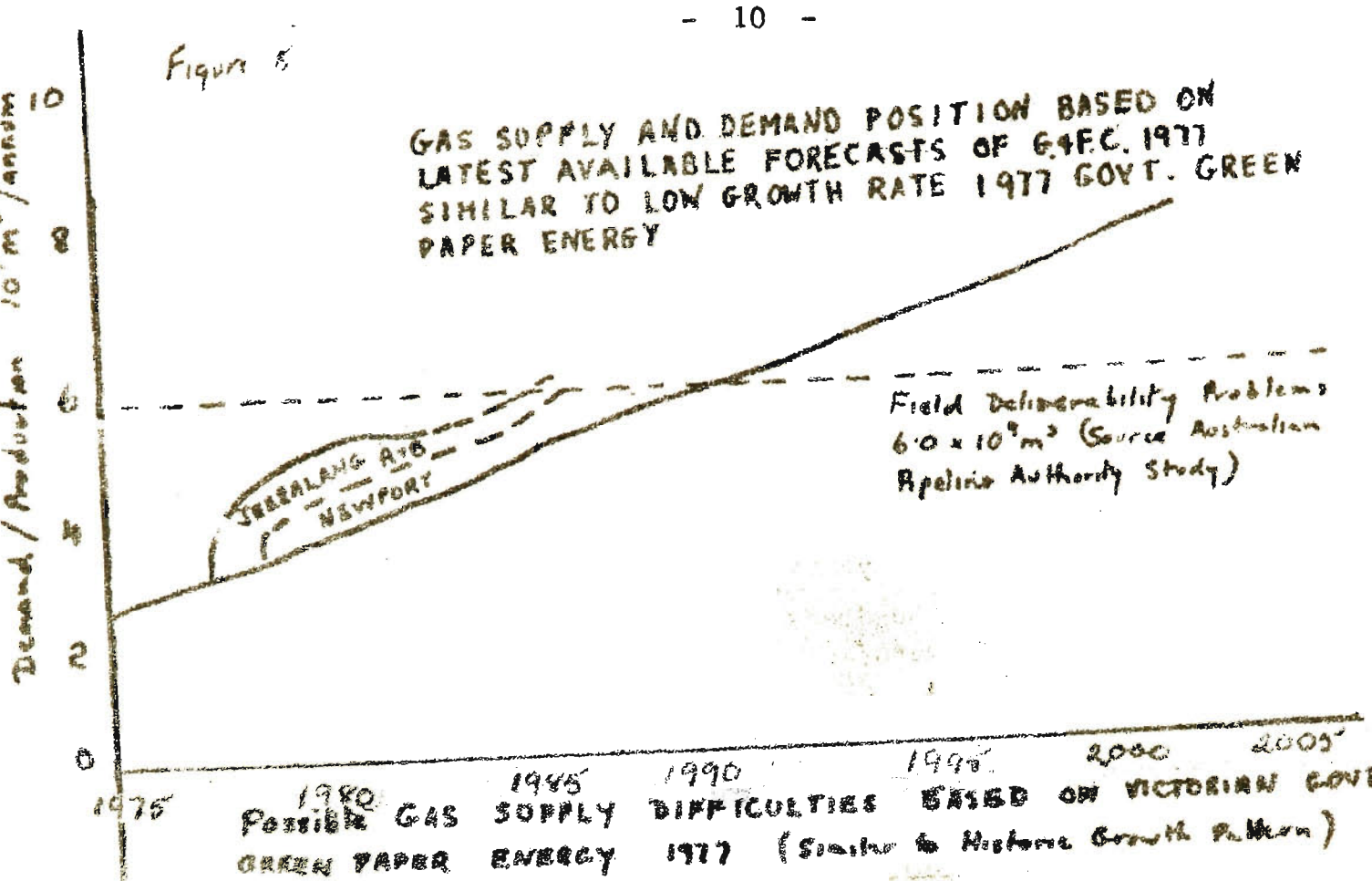
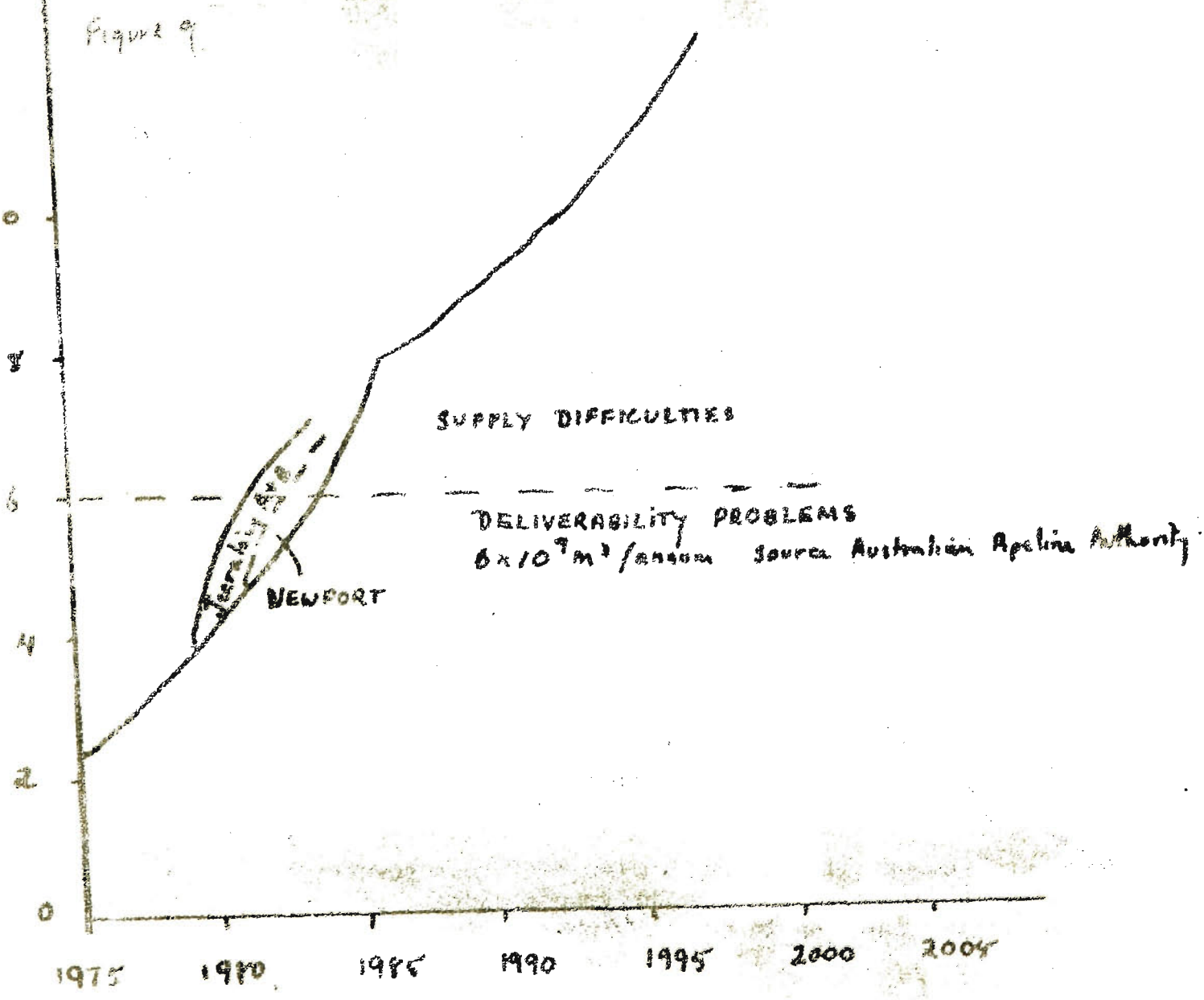


Figure 9



The CUE/CVV collective has devoted 2½ years to the investigation of these problems and the solutions that will be necessary. The basis of the solution will have to be social in nature, with the use of appropriate technology. We believe that there is need to build up a supportive social structure, a process that we call "creating community". We need a city that is based on access to facilities not mobility. When the car dominates our society to such an extent that a shortage of liquid fuels will cause massive unemployment for workers in the car and ancillary undustries, the effects of which will flow on to other industries very rapidly creating even higher unemployment.

The CUE/CCV collective wish to draw the Trade Union movement's attention to the problems associated with energy shortfalls and supply difficulties and the social consequences for your members. It is a subject which is directly related to your decision on social issues last week. We believe that the union movement should be approaching this problem from an offensive position and not fighting a rearguard action from a very unsecure position.

We therefore suggest that the THC or any interested unions set up and finance a wide ranging task force to investigate the problems associated with a liquid fuel shortage as well as other nonrenewable energy problems. In particular to study the impact of liquid fuel on various industries and unions. The task force should unite with the exciting work being done by the Australian Railway Union (illustrated by Research Reports 2 and 3), and the Australian Telecomunications Employees Union who are investigating automation, and any other investigations being carried out by other unions and work being done by Environmentalists For Full Employment in the area of technological change and energy related matters.

Prepared by John Dick 19th October, 1978
with the help of Dave Farrant
Graham Rodgers
Maurice Crow
Australian Conservation Foundation
Environmentalists for Full Employment
Conservation Council of Victoria/
Conservation of Urban Energy

Chris Mardon