

MORE EFFECTIVE INFRASTRUCTURE DECISION-MAKING:
LESSONS FROM THE PROVISION OF COAL TRANSPORT
INFRASTRUCTURE IN NEW SOUTH WALES

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ABSTRACT

Infrastructure systems are capital intensive, often technically complex and have long lead times in their planning phases. Not infrequently, however, their implementation phase is conflict-ridden, is inordinately long and becomes highly politicised. The end result is a significantly lower system efficiency and a spatially suboptimal pattern of infrastructure location.

This paper focuses on the nature of the infrastructure decision and policy making process for the provision of export coal infrastructure in NSW over the period from the mid 1970's to the early 1980's. It outlines the chronology of infrastructure development, particularly the development of the proposed Botany Bay and Port Kembla coal loaders and adjacent rail systems; and identifies the role played by the key decision making elements.

The paper argues that if infrastructure provision is to avoid prolonged and expensive delays and conflict then it is critical that the formulation phase concern itself not simply with the technical, economic and financial aspects of the project but also with understanding the underlying political tensions likely to be met in implementing it. In the final section of the paper a simple normative model is proposed which takes this principle into account

Infrastructure decision making is highly politicised. It is, not unusually, conflict-ridden; it may be inordinately slow; and the compromise infrastructure system which is likely to result may well be less operationally and spatially efficient than a range of alternatives. Yet, despite these inefficiencies in the implementation of transport infrastructure projects - and the high money and social costs into which they translate - transport planners continue to embrace a paradigm which sees the policy making process as one which is essentially and fundamentally rational.

This paper argues that this is not so; that the politicisation of the infrastructure decision making process requires a paradigm which takes full account of the complexities and dynamics of the policy making environment in both the policy formulation and policy implementation phase; and that effective infrastructure provision will depend not simply on technically adequate system design but more critically on an adequate understanding of the implementation process.

The paper falls into three parts. The first part examines, albeit briefly, the fundamental characteristics of the decision and policy making process per se. It explores the notion of pluralist theory, of power linkages and the 'play of power' and of incrementalism in policy making generally. In the second part we look more closely at the patterns and dynamics of infrastructure development for export coal in NSW. Particularly, we focus on the nature of the decision making process for the proposed development of two new coal export terminals, one in Botany Bay and the other in Port Kembla and for major new mine-to-port rail networks. By so doing we underline the complexity and tensions in the decision making environment. The third part draws the two sections together and suggests a more appropriate normative model for infrastructure decision making.

I: THE IRRATIONALITY OF 'RATIONAL' POLICY MAKING: SOME COMMENTS

There is a range of policy making models that has been well-established in the political science literature; but for our purposes we focus on two fundamentally contrasting models which exemplify, on the one hand, a

synoptic approach to policy making and, on the other, an approach which lays stress on rational policy making as an interactive and negotiative process.

i. The 'Rational-Comprehensive' paradigm.

Traditional policy making models have focussed almost exclusively on policy making as a rational process. Within the framework of the rational-comprehensive model, for example, the policy-maker follows a number of sequentially ordered decision-making steps in which all policy options and consequences of each are canvassed and assessed. This model, in its extreme form, comprises a number of basic strategic procedures - problem identification; the determination and investigation of all options; and the assessment of the consequences of all options.

On the basis of a full understanding of, and information about, all problems and opportunities, all possible options and consequences of each option, a rational policy choice can be made.

In effect, the model assumes unrealistic intellectual capacities and sources of information. Dror argues that the construction of "complete inventories of values and resources, identifying all alternatives, making valid predictions of the costs and benefits of all alternatives are tasks beyond human knowledge and capacity" (Dror, 1964). In addition, the 'rational-comprehensive' model is based on the metaphor of a single individual making a policy choice. In practice, however, complex decisions emerge from a complex process in which bureaucrats, interest groups and politicians, among others, participate. Not only is the scope for disagreement among these participants considerable and the ability therefore to reach agreement on problem identification, and options difficult, but the model does not allow for the existence and input from these diverse sources all of which have a vested interest to promote. Furthermore, it totally fails to recognise the politicisation of the policy process in the case of controversial developments and locations.

The problem with this model is not simply that related to its innate merit or its lack of applicability to real world decision-making situations; it is unfortunately, that planners and policy-makers attempt to emulate it!

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The model totally fails to recognise real world policy-making problems and, in so doing, fails to recognise the inherently political nature of the policy-making process.

ii. 'Partisan Mutual Adjustment': Policy Making as an Interactive and Incremental Process.

The rational-comprehensive model, which is essentially an intellectual exercise, is inappropriate except for relatively simple problems. Synoptic analysis for complex issues, Lindblom (1959) argues, is beyond human capabilities in that no person, committee or research team even with all the resources of modern electronic computation, can complete the analysis of complex problems using this method. There are, he argues, "too many interacting values at stake, too many possible alternatives to consider, too many consequences to be traced through an uncertain future". Further, he argues that policy-making is carried out by a policy-making group comprising a number of participants, including planners and legislators as well as other participants. Moreover, policy options, he suggests, are not determined according to planned and rational means, but are products of political interaction - politics determines policy (Lindblom 1980).

Lindblom argues that interaction sets policy - interaction in which all participants play a partisan role each pressing a point of view and a vested interest. The political interaction through which participants control or attempt to influence other participants is analogous to a 'play of power' which proceeds by a series of negotiating steps between partisan groups using a variety of resources and techniques in order to reach a compromise.

Unlike the rational-comprehensive model which suggests that policy-making is a finite process in which problems are identified and resolved, Lindblom's 'muddling through' model indicates that issues are rarely resolved - instead strategies are frequently adopted which cope with problems on a temporary basis only. Policies according to this model are made and remade and incrementalism - a process of successive approximations to some desired objectives in which the goals themselves continue to change under a process of reconsiderations - is practised.

This paper argues that a 'political' perspective is fundamental to an adequate explanation of policy-making processes. It further suggests that pluralist theory, with its focus on power and the interaction of groups, provides an appropriate conceptual framework within which to explore questions of infrastructure location.

It argues, like Lindblom, that policy-making is a product of political interaction among numerous participants. These may include formal policy makers such as politicians and members of the bureaucracy, as well as non-formal participants - trade unions, environmental lobby groups and voters, for example, who have combined their resources in order to influence it. It further argues, with Barrett and Fudge, that in considering the policy-action relationship "...as an interactive and negotiative process taking place over time between those seeking to put policy into effect and those upon whom action depends... more emphasis is placed on issues of power and dependence, interests, motivations and behaviour... (and on)... factors affecting individuals' and agencies' scope for action and the perception and use of that scope". (Barrett and Fudge, 1981).

Clearly, the two positions - that of 'rational-comprehensive' and 'partisan mutual adjustment' - are irreconcilable. The important question is, of course, which model 'fits' the policy making process that results in provision (or non-provision) of transport infrastructure? The question is not purely academic; for it has important, indeed critical, implications for the way in which we go about the complex task of infrastructure decision making and provision.

II: THE DYNAMICS OF INFRASTRUCTURE PROVISION : PORT FACILITIES AND RAIL LINKS FOR EXPORT COAL FROM SOUTHERN NSW

Between 1960 and 1970 raw coal production in NSW almost doubled - from 18 million tonnes to 35.8 million tonnes - and though there was significant expansion in the Southern and Hunter Valley fields, Burragorang Valley mines (owned and operated by US interests) emerged as a major new concentration of production. From 1.4 million tonnes in 1960 production soared to almost almost 5 million tonnes in 1970, 2.6 million tonnes of which were exported, essentially to Japanese steel mills.

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Increasingly, however, the Company's export outlets - the Balmain and Port Kembla loaders - were under considerable pressure, with Balmain handling 2 million tonnes annually and the balance being dispatched by truck to Port Kembla. Moreover, with projections of annual outputs reaching 10 million tonnes by 1980. It was apparent that the two loaders would be unable to handle the anticipated increases.

In addition, the ports were under further pressure handling increasing quantities of export coal from other areas. The Balmain loader, for example, apart from handling Burratorang Valley coal, was the outlet for small but expanding thermal coal exports from the Western district, and Port Kembla was handling increasing tonnages of coking coal from the southern mines.

i. A New Offshore Loader?

It was against this background that Clutha proposed the development of a major new export facility which included the construction of a railway line from the Burratorang Valley to the Illawarra escarpment and an offshore coal loading terminal near Coalcliff. For the Company, the proposal had major benefits - it would allow expansion; it would give the Company control over its export coal movements; and it would simplify the existing mine to port movements.

In the event, however, the project was shelved in 1972 - not because of technical infeasibility, nor on the grounds of economic viability but because of the political realities of the decision making environment. Ostensibly, the perceived negative externalities of the offshore loader - destruction of the beaches and escarpment forests and dust pollution - underlay the politicisation of the infrastructure decision. But a degree of opportunism on the part of the major opposition party - at that time the ALP - saw mobilisation of grass-roots political support and the potential for the defeat of the State Government at the 1971 elections. Effectively, the Clutha debate signified the emergence of environmental pressure groups in the policy process (to be critical in the late decision making for the Botany Bay/Port Kembla loaders); and it also underlined a growing resentment of foreign domination of Australia's

mineral resources, and multinationals generally, through the Whitlam period (1972 - 1975).

Space prevents any detailed discussion but we may note that the issue became the subject of questions, motions of urgency, and adjournment debates in state and federal parliaments; a dozen trade unions declared their opposition to the company's plans, some hinted broadly at a black ban, and a decision of the NSW Labour Council lent them encouragement; four political parties made policy pronouncements on the Clutha Act, and three (the ALP, the Democratic Labour Party (DLP) and the Communist Party) made its repeal part of their platforms; and non-party action groups were formed specifically to defeat the company's plans.

ii. A Second Bite at the Cherry: New Coal Loaders in Botany Bay and Port Kembla?

Pressures on existing coal export infrastructure continued to mount. The Balmain coal loader, with a 2.8 million tonnes capacity was ill-equipped to handle increasing tonnages, and was restricted in its ability to handle vessels up to 40,000 DWT). Any expansion of the facility in order to accommodate larger Panamax size vessels was considered to be 'environmentally undesirable' and rebuilding was thought impractical.

At Port Kembla some work had been carried out during the early 1970's to upgrade the port, such as dredging and deepening of the harbour. Although this had enabled larger vessels to use the facility, it had not increased the loader capacity, which remained unchanged at approximately 4.8 million tonnes.

By 1974, too, major new investments in coking coal mining ventures were being undertaken and eleven new mines in the southern and southwestern regions were under construction or at various stages of the planning process. Projected tonnages from the new mines were of the order of 14 million tonnes annually, most of it for export and it was anticipated that an additional 10 million tonnes would be shipped through Port Kembla annually.

Moreover, the 1973/74 oil crisis and the fourfold increase in oil prices led Japanese power generating companies to seek long term thermal coal contracts with

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Australian producers. This was quite a new emphasis because until the early 1970's thermal coal had been exported on a very small scale only and often as a byproduct of soft coking coal. Now, however, it became economically viable to produce specifically for export purposes. It was anticipated therefore that coal exports from the Western fields, for example, would also escalate. But, as with Burratorang Valley growth, expansion of export from Western mines was also restricted by the capacity of the Balmain and Port Kembla loaders.

Concern about inadequate port capacity was widespread and there was considerable discussion about possible development options. The MSB, for example, had for some time been exploring the possibility of a coal loading facility as part of the expanding Botany Bay development.

At the same time, however, the Department of Public Works (PWD), which had the responsibility of all other NSW ports, including of course Port Kembla, had undertaken formal investigations into the feasibility of the expansion of coal loading operations at Port Kembla. Thus, by the mid-1970's two proposals for coal loaders were current - the MSB was negotiating with a consortium of coal companies for the construction of the Botany Bay coal loader and the PWD was proceeding with plans to develop an offshore facility at Port Kembla.

In April 1974 three major companies acting as a consortium - the still-embattled Clutha, Austen and Butta and Coalex - began negotiations with the MSB for the construction of a privately-owned loader. The companies had mining interests in the Western and Burratorang Valley fields. Much of the Burratorang Valley output continued to be for overseas markets and although Western production had previously been essentially for domestic purposes, increasing quantities would now also be destined for export.

The problem for the companies was not solely one of port capacity, however, but also of accessibility to existing loaders and of transport costs. Although transport costs from the Burratorang Valley as well as the Western mines to Botany Bay would be marginally higher than those to Balmain, they would be considerably less than those payable to Port Kembla for example. Thus in terms of

accessibility, distance to port and transport costs, the Botany Bay location was the obvious choice.

The Botany Bay coal loader did not eventuate; for, as with the earlier Clutha proposal the infrastructure decision making process became highly politicised. Again, rejection of the proposal reflected perceptions of environmental and ecological externalities; and again the state opposition party (still the ALP), again acting in the shadow of an election (1976) but in this case with a specific interest in retaining or winning marginal seats around Botany Bay (and in a mining electorate in the Blue Mountains), was able to gather grass roots support. A major infrastructure decision was made not on economically rational criteria but on the basis of political sensitivities - indeed, on the basis of political rather than economic rationality.

iii. 'The Play of Power': The Underlying Tensions

Who were the players in the decision making process? And who called the shots?

a. State Government and its agencies.

The State Government of the day, the long-serving Liberal Government, was strongly pro-private ownership of port facilities. Not surprisingly, therefore, in February 1975 the Premier (then Lewis) announced that Cabinet, on the recommendation of the Minister for Public Works and Ports, had agreed in principle to the proposal, subject to the satisfactory outcome of an enquiry by the State Pollution and Control Commission.

The Commission assessed the evidence and based its recommendation on the effects of transporting coal from the collieries to Botany Bay; on the consequences that would derive from the existence and use of the proposed coal export facility at Botany Bay; and on the consequences of denying the use of Botany Bay as an export port for Western and Southwestern coal.

The Commission found that in view of the fact that the Botany Bay facility would have rail receipt facilities only the proposed export operation would not cause unacceptable road traffic on public roads. It found also that the disbenefits of coal train traffic were not exclusively a feature of the Botany Bay location; and

that upgrading of rail access would reduce noise levels. In evaluating other location options the Commission found it 'environmentally undesirable' to rebuild the Balmain loader; and that a Port Kembla option would add considerably to freight costs (between \$1.40 and \$2.10 per tonne for Western and Burratorang Valley coal respectively).

The Commission concluded that "in view of the employment and general economic benefits it would confer on the community, and having regard for the environmental controls that would be placed on its construction and operation, the proposed coal export facilities at Botany Bay should not be rejected on environmental grounds".

It was, however, the Maritime Services Board, the very powerful Statutory Authority with the constituency for Sydney port development, which not only strongly supported the proposal but pushed it ahead with considerable determination. Indeed, as Sanders (1984) has persuasively argued, it was the MSB's sectoral control and subsequent sectoral politicisation of port development in Botany Bay that created fundamental problems.

b. Pressure group politics

The Botany Bay scheme became the subject of an effective opposition campaign regarded as "the biggest and most concerted resident protest Sydney had ever seen" (Sanders, 1984). Opposition came from conservationists and resident action groups who demanded a Royal Commission into all proposed development around the Bay; and more than seventy separate groups and progress associations amalgamated to form the Botany Bay Action Committee.

The Total Environment Centre, Sydney's most politically active conservation/environmental lobby organisation, established the Botany Bay Planning and Protection Council to investigate the various development proposals affecting Botany Bay and adjacent areas. The Council called for a moratorium and a comprehensive environmental and social impact inquiry covering all major developments in the area in which all community groups likely to be affected would participate.

In addition, the Nature Conservation Council, representing fifty conservation groups throughout the state and having about 5,000 members, voted to oppose the Government on the Botany Bay issue.

Local Council (i.e. Local Government) opposition was also strong and the Rockdale Council organised meetings with ten local municipalities in order to combine and coordinate their action campaign.

By and large unions were aligned with community pressure groups and certainly the South Coast Labour Council, with at least some vested interests in the expansion of Port Kembla, opposed the proposed Botany Bay loader.

The anti-development campaign was cohesive, well-coordinated and effective; but it was the electoral power of residents - occupying marginal seats, in the shadow of an election and involving an opposition party which had been out of power for many years (but recently returned to power at the federal level) - that was the critical factor.

c. The Opposition party

About 70 local resident action groups campaigned aggressively against the Government in a number of marginal seats. Unperturbed, the well-entrenched State Liberal Party regarded the problem as a non-issue and, in one marginal seat, accused the ALP of trying "to whoop up a political front on the issue". (SMH 16-4 1976).

The ALP on the other hand, identified with concerned residents and lobby groups and pledged that, if elected, it would impose a moratorium on further development of Botany Bay and would reassess the entire port development programme. The ALP move was prompted by the fact that, if it was to win government, it was crucial to retain Labor held marginal seats around the Bay and to win the Liberal seat of Hurstville. In addition, it was considered essential for the Labor Party to win the Blue Mountains electorate, in which the Lithgow coal mining area was situated.

The ALP at this stage was in a rather ambivalent position concerning Botany Bay development. On the one hand, and as part of its election promise to win over residents in the vicinity of Botany Bay, the Party pledged that, if

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elected, it would impose a moratorium on the port development and reassess the scheme. On the other, however, it had to gain the support of the Lithgow miners whose prosperity and the future growth of the Western coal fields depended on the availability of an accessible export outlet for its coal.

Political promise was the mechanism for resolution - and the Leader of the Opposition assured the Lithgow residents and coal producers that whether or not the Botany Bay development proceeded, he would ensure that "they would have an export outlet for their coal" and that he (Wran) "would look after them". (Lithgow Mercury 24-11-1976).

d. Mining company interests - differing positions?

Plans had been proceeding for the development of both the Botany Bay and Port Kembla loaders. The NSW Combined Colliery Proprietors' Association indicated quite clearly that the Port Kembla facility was seen as a complement of, and not in competition with, the Botany Bay loader. Within industry circles concern began to be expressed, however, about the possible surplus capacity and hence unprofitability if both loaders were completed. As a result, conflict began to emerge and lobbying occurred by companies over the eventual location of loading facilities.

Southern interests, particularly Kembla Coal and Coke (KCC) and The Bellambi Coal Company, pushed for the early completion of the Port Kembla loader. KCC had pointed out that in the event that Botany Bay was developed as well as Port Kembla, the reduction in throughput at each facility would increase the coal loading charges. KCC and the Bellambi Coal Co. had opposed the Botany Bay loader for this reason and had pushed for the early completion of the Port Kembla facility. KCC, for example, anticipated difficulties over possible export outlets once the company's expanding mine development programme was completed. The Westcliff mine, for example, would be unable to export through Botany Bay - the mine did not have access to rail and the Botany Bay coal loader would not be equipped with road receipt facilities - the company had no option therefore but to use the Port Kembla facilities.

Clutha on the other hand, had indicated that it "did not consider the proposed offshore loader at Port Kembla to be a feasible alternative to the proposed coal loader at Botany Bay" (Clutha 1976). The company argued that the Port Kembla location was suitable for serving the South Coast district mines but that the twin installation of both Botany Bay and the Port Kembla loaders required adequate tonnages to justify the capital expenditure. Not surprisingly, the company, with its extensive holdings in the Burratorang Valley and Western district, favoured the Botany Bay location.

Producers in the West also continued to push for the Botany Bay site. If this was abandoned and the Balmain loader ceased operation, as had earlier been indicated by the MSB, all Western and Southwestern coal would have to be exported through Port Kembla.

The NSW Combined Colliery Proprietors' Association pointed out that if this eventuated then the additional distances and charges for these companies would be considerable. It estimated that the additional freight costs incurred by Burratorang Valley and Western mines would, by 1985, exceed \$8 million and \$8.4 million respectively. In addition, the Association pointed out that the transport cost differential could not be offset by any benefits in loader operation charges.

e. Legitimising Development: a public inquiry!

In the event the State election was won - with an electoral margin of one seat - by the ALP; and in accordance with its promise the new Government appointed a Commission of Inquiry (S.H. Simblist QC). This action was to be the legitimising factor and provide the rational justification for what was essentially a political decision - the abandonment of the Botany Bay coal loader development. The appointment of an independent Commissioner in effect removed the controversy from the political arena and, by focussing on economic and environmental questions, neutralised a highly political decision.

The Commissioner found that a need existed for increased port capacity for Western, Southwestern and Southern coal, but that "economic justification for the loader to be located at Botany Bay was not established" and that

the "project should not proceed at this stage" (Simblist 1976).

He further recommended a number of alternatives, including the development of a Port Kembla offshore loader. Access to the Port Kembla location for both the Burragorang Valley and Western producers could be provided by the construction of a new railway line from Douglas Park to Port Kembla or alternately that the Moss Vale Line be upgraded, or both. The higher rail transport charges in that event, Simblist indicated, could be rationalised if an overall energy policy was established and could be offset by lower port charges.

In addition, contrary to the recommendations of the SPCC and the MSB, Simblist indicated that the immediate expansion of the Western fields could proceed if the existing Balmain coal loader was upgraded.

Public inquiries are not known for their appropriateness in dealing with complex major development projects and this one was no exception. There was no rigorous analysis of transport costs; or of alternate options for development. But the inquiry had served its purpose; it had legitimised the political decision.

V. THE OUTCOME?

In June 1977 the NSW Premier (Wran) announced that State Cabinet had rejected the idea of building a coal loader in Botany Bay and had opted for one at Port Kembla. He indicated that the "Port Kembla site had been chosen because, although it was more costly than Botany Bay, in the long term it would be more beneficial to the state". He pointed out that "the cost of building the loader at Botany Bay would have been between \$120 million and \$130 million while the Port Kembla proposal would cost between \$160 million and \$180 million" (SMH 15-6-1977). In addition he announced that the existing facility at Balmain would be upgraded to handle increasing export tonnages from the Western fields; and any overspill of Western coal diverted from Balmain to Port Kembla would attract equalized freight rates. Further, he announced that a new rail link would be built from Douglas Park to Port Kembla to facilitate coal movement from the Burragorang Valley mines to the new loader.

In the event, the new loader was opened in November 1982.

A newly elected State Government had made a series of politically 'rational' decisions about transport infrastructure. But in so doing it had committed itself to -

a. the more expensive of the two loader options, not only in terms of the actual capital costs of the Port Kembla loader vis a vis that at Botany Bay, (perhaps of the order of \$50 to \$100 million) but also because the government itself would be committed to funding the new loader;

b. significant capital investments (about \$300 million) required for new rail (the proposed Douglas Park-Port Kembla Line) and/or rail upgrading (Moss Vale and the Illawarra Lines). (In fact, the failure to provide an adequate rail transport network has had severe operational implications for the loader. For, with a road receival design capacity of 2 million tonnes, the 6 million tonnes that has in fact been carried by trucks for some considerable time, has created serious congestion problems);

c. a large programme of road upgrading and the development of adequate road links;

d. capital investment to upgrade the operations of the Balmain loader; and

e. considerable levels of subsidy to the Western coal producers under a promise to ensure that the freight cost differentials incurred between the cost of railing coal to the Balmain loader and south to Port Kembla would be met by the State Government.

In effect the new State Government had been less economically than politically 'rational'.

III: CONCLUSIONS: SMOOTHING THE IMPLEMENTATION PROCESS?

For planners long involved in the problems of infrastructure decision-making and provision, the politicisation of the process should come as no surprise. Yet, as the case study demonstrates, the policy making process may be complex, much-delayed, conflict-ridden and cost-distorting.

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How, then, do we formulate and implement transport infrastructure policy in such a way that it takes account of the 'political realities'? Is it possible to smooth the implementation process?

We argue, in this paper, that more effective infrastructure policy making requires that we recognise

- i. that the process must be seen within a political context in which a plurality of interests - with varying degrees of power, influence, differing values and scope for action and different political agendas - exist amid a complex set of linkages that, as Hjern and Porter suggest, comprises an 'implementation structure' (1980);
- ii. that the policy process is essentially an interactive and negotiative one that sees implementation not as putting policy into effect but as getting something done';
- iii. that policy itself is not static but will be modified throughout the implementation process - in effect, that policy 'content' may be a function of the process itself; and
- iv. that improvement to the policy process does not come by attempting to conform to the principles of the rational model; rather, as Lindblom suggests, it comes from practising the policy making process more skilfully!

What are the implications of these notions in real world policy making? We return to our case study of the provision of coal transport infrastructure to propose a simple normative model as a framework for a more pragmatic and effective decision making process.

Figure 1 is a simple diagrammatic model of the way in which coal transport infrastructure decisions and policy were made through the period in which the Botany Bay/Port Kembla decisions were being made.

The model suggests that infrastructure projects were initiated by one (or several) interests - the Government, the mining companies or perhaps local Councils - in response to particular conditions (port congestion with rapid increases in exports, for example). Project

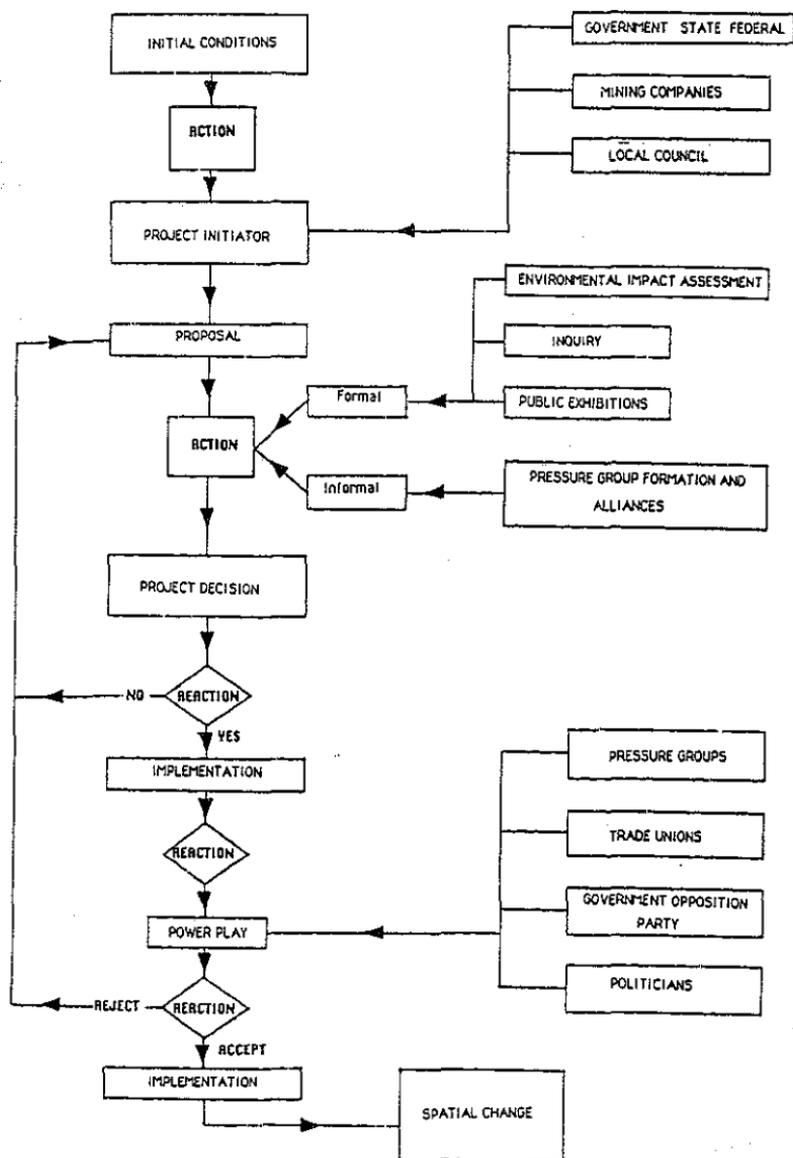


FIGURE 1: The Coal Transport Infrastructure Decision Making Process

SOURCE: Everett, S.A.M., Port-Oriented Coal Transport Infrastructure: An Analysis of Locational Decision Making, Unpublished MA Thesis, University of Wollongong, 1984.

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proposals, made public in due course, attracted a range of action. On the one hand, this was of a 'formal' nature, sometimes required by law - Environmental Impact Statements, for example; on the other, reaction to infrastructure proposals, were often 'informal' and this was the period in which alliances, pressure groups and affiliations were formed to deal with the proposed development.

Despite often intense pressure and conflict at this stage a formal decision would be made (a Cabinet decision, an Act of Parliament) and implementation of the project or policy would begin.

Not surprisingly by this time the 'battle lines' were drawn and the 'play of power' became extremely volatile, complex and conflict-ridden; and the proposed policy or project may or may not have been implemented or may have been subjected to considerable modification.

The diagram suggests a number of feedback loops - the possibility, in fact, of an infinite number of 'back to square one' scenarios. The resulting spatial change (the provision or non-provision of infrastructure elements or networks) may be, and was, as we have seen quite different from the initial proposal!

Figure 2, based on the principles suggested above and on the notion of the policy making process as an interactive and negotiative process, proposes a better way.

It suggests, particularly, the critical need to ensure that the intensive outworking of the interactive process, the 'play of power', and consensus seeking are fundamental and integral parts of the formulation stage rather than the implementation stage. This provides the possibility for a more appropriate project proposal - which may well be different from earlier versions but has had the benefit of wide-ranging discussion and negotiation.

Ideally, implementation would then proceed smoothly. It is possible, however, that some opposition may still occur as it is unlikely that all groups will be satisfied equally - consequently some groups will continue to oppose a project decision in what we have termed a 'residual' power play. It is significant, however, that the majority of potentially opposing factions will have

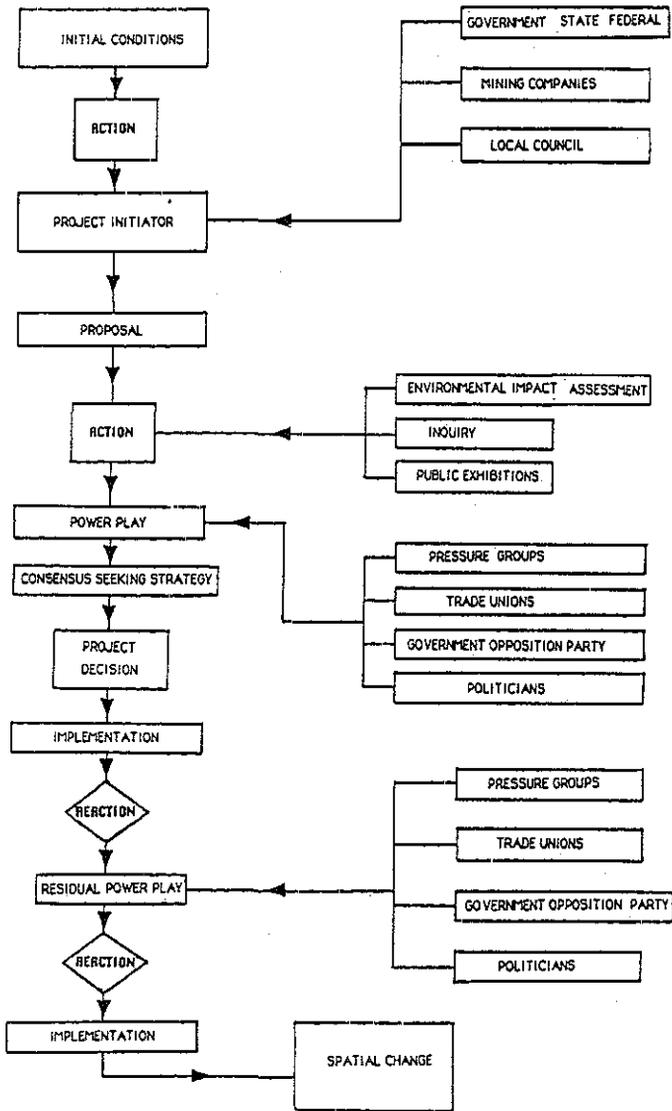


FIGURE 2: The Coal Transport Infrastructure Decision Making Process: A Normative Model

SOURCE: Everett, S.A.M., The Location of Transport Infrastructure and the Policy Making Process: Port Terminals and Modal Networks for NSW Export Coal in the Port 1970, Unpublished Ph.D Thesis, University of Wollongong, 1988.

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been identified during the initial stages. It is certainly not an infrequent occurrence that powerful forces emerge and prevent implementation from being carried out and it is this situation which is likely to be minimised.

This is not to say, of course, that political reality is not an elusive phenomenon; but for transport planners it has proven to be unnecessarily difficult to come to terms with at least in part because of inadequate and inappropriate paradigms within which we have chosen to work.

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