

**B.C. Offshore Development Issues:
The 2002 Dunsmuir Symposium Report**

Prepared for

The Maritime Awards Society of Canada

By

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Emeritus Professor of Law
University of Victoria
August, 2002**

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The Maritime Awards Society of Canada (MASC)

B.C. Offshore Development Issues

The 2002 Dunsmuir Symposium Report

I Introduction

In October 2000 MASC undertook to organize a workshop at the University of Victoria's Conference Centre at Dunsmuir Lodge, outside Sidney B.C., on some of the issues related to the possible development of offshore hydrocarbon resources off the coast of Northern British Columbia. A report based on that discussion ("BC. Offshore Hydrocarbon Development: Issues and Prospects") was made available on MASC's website [<http://web.uvic.ca/masc>], and also circulated in hard copy to interested individuals and institutions, through the good offices of MASC Governor Andrew Walls and the BC Institute of Technology.

Since then events have moved on. In May 2001 the Liberal Party won election to office in B.C., and the new government reaffirmed its intention of examining the provincial moratorium, which has been in effect almost continuously since 1970. A federal moratorium has also been maintained since 1972. The B.C. government announcement re-activated controversy over these issues and demonstrated the need for a better informed public debate. In the summer of 2001 statements by the Premier and the Minister of Energy and Mines emphasized the government's interest in accelerating the process of consultation in the Central Coast and North Coast regions of B.C., which would be the regions most directly affected by a change in moratorium policy. The Northern B.C. Development Commission, which had been created by the previous government, was disbanded, and the members of the Legislature from that region were requested to conduct consultations in their constituencies and to report back by January 2002.

In October 2001 the B.C. Minister of Energy and Mines took the further step of appointing a three-member Scientific Review Panel to provide advice on four questions concerning the status of offshore science and technology and related matters. The members of the Panel were: Dr. David Strong (chair); Dr. Pat Gallagher; and Dr. Derek

Muggeridge. The Panel's two-volume report was submitted in mid-January 2002, and made available to the public in late April. The executive summary of the Panel's report is included in Appendix I below.

Since October 2000 MASC has remained committed to the cause of informed discussion of these important public policy issues. In October 2001 it was invited by the B.C. Ministry of Energy and Mines to provide secretariat services to the newly appointed Scientific Review Panel; and in that capacity three MASC members (including Dr. Rod Dobell and Dr. Douglas M. Johnston) participated actively in supporting the review process. Almost immediately after the release of the Panel's report, in May 2002, MASC organized a second meeting of specialists, officials, and members of the MASC Board to review some of the questions that seemed paramount in the aftermath of the consultation and review processes initiated by the new provincial government. This meeting was also seen as an opportunity to consider further MASC activities that might be appropriate in promoting public awareness in this sector of coastal management. The agenda of that meeting, held also at Dunsmuir Lodge, is to be found in Appendix II.

This report is based in part on these discussions, but also on other sources. Because several of the participants were government officials participating in their personal capacity, this MASC report, like its predecessor, is written on a non-attribution basis. Once again, an effort has been made to write in a succinct style in the hope of reaching a wider readership. Also it should be emphasized, once again, that MASC's purpose is not to advocate or promote any particular position or action on the moratorium issue itself, but to clarify any considerations that must be weighed in decision-making in this area of public policy.

II Offshore Science and Technology

Since the mid-1980's several studies and conferences have evaluated the science and technology relevant to the offshore waters and seabed of British Columbia. In October 2001 the BC Minister of Energy and Mines appointed a three-member Scientific Review Panel to update this body of technical knowledge, and on that basis to provide advice on four related matters:

- (i) the scientific and technical considerations relevant to offshore oil and gas exploration, development and production;
- (ii) further research or studies that should be undertaken to advance the “state of knowledge” on these considerations;
- (iii) any specific government actions that should be taken prior to a decision on whether to remove the current provincial moratorium; and
- (iv) any specific conditions or parameters that should be established as part of a government decision to remove the moratorium.

The Panel’s report consists of five substantive chapters with an accompanying bibliography, which constitute Volume I, and numerous consultants’ reports that make up Volume II. In Chapter Five the Panel sets out its conclusions and recommendations in response to the questions it was asked to address. These may be summarized under six headings.

A. Context and Knowledge

It was recommended by the Panel that a decision by the BC government on the immediate question of whether or not to lift the offshore moratorium should be taken with a view to its priorities in the larger context of a provincial energy policy. Reference was made to the parallel review by the BC Energy Policy Task Force of alternative sources of energy (i.e. other than offshore petroleum) that can be considered as “candidates for inclusion in a sophisticated, economically feasible and environmentally sound energy strategy for the province over the next 30-40 years, a period that would coincide with the expected period of offshore hydrocarbon production if the present moratorium policy were to be removed” (Report, p. 39). Alternative energy policies for BC are discussed below in Section III of this Report.

B. Deficiencies in Knowledge and Capacity

The Panel noted that the growth of generic offshore scientific knowledge is impressive, and that the technologies available to the petroleum and related sectors of

industry have improved considerably. However, significant gaps in local knowledge remain, and it must be kept in mind that offshore BC presents “an array of potential hazards and engineering challenges, including earthquakes, tsunamis, severe storms, high tidal ranges and currents, and other natural phenomena” (Report, p. 40). Risks need to be carefully assessed, but the technology that would be deployed in BC waters was considered by the Panel to be “far superior to that of just a decade ago” (*ibid.*).

Accordingly, the Panel made these four recommendations:

- (i) that the governments of both Canada and BC take steps to gain significantly higher levels of understanding of the sea bottom and sub-surface conditions off the coast of BC in general, with an early and specific focus on the Queen Charlotte Basin and Hecate Strait areas;
- (ii) that, before any new industry is initiated in a specific marine ecosystem or ecoregion such as the Queen Charlotte Basin, action should be taken to establish a comprehensive set of pre-perturbation baseline data on the biota (including life-cycle histories of different species and their habitats), so that we can understand and assess which aspects of the marine ecosystem might be most at risk from the proposed development;
- (iii) that the federal and provincial governments set a high priority on completion of critical data bases, as well as the necessary capabilities for oil spill responses and countermeasures; and
- (iv) that federal and provincial expertise in BC be strengthened to ensure adequate scientific and regulatory/administrative capacity in agencies that would be given responsibilities in the event of a decision to initiate the process of offshore hydrocarbon development.

C. Procedural Considerations

The Panel, referring to a consultant’s report, expressed the view that “there are no specific government actions that need to be taken prior to a decision on whether to remove the current provincial moratorium” (Report, p. 44). Key preconditions to offshore production already identified by various institutions were noted, including the

requirements prescribed under the new B.C. Environmental Assessment Act and the revised Canadian Environmental Assessment Act, which, at the time of writing (August 2002), was in the final stage of enactment.. Accordingly, since this legislation itself sets out requirements for comprehensive environmental assessment as part of licensing or approval processes for any specific exploration or development proposals, the decision whether or not to remove the present “blanket” moratorium seemed to the Panel to be “fundamentally one of procedure, not science and technology” (ibid.).

D. Regulatory Regime

The Panel identified potential threats to the marine ecosystems of British Columbia, including the potential effects of oil pollution, but noted that very little of the oil pollution in the oceans comes from offshore production. It favoured a “strengthening of efforts to protect marine ecosystems through more effective controls”, but did not find “convincing evidence that the introduction of offshore installations and the commencement of drilling operations off the coast of BC should continue to be banned for general ecological reasons” (ibid.).

Five recommendations were made under this heading:

- (i) that, should the moratorium be removed, the government should ensure, through appropriate consultation, that it has an up-to-date and properly resourced regulatory and management regime in place;
- (ii) that, before exploration and related activities take place, a quantitative risk analysis be undertaken as a vehicle for decision-making by the various stakeholders;
- (iii) that appropriate guidelines be applied for reducing the impacts of seismic exploration on the ecosystem under licence conditions for any oil and gas exploration off the BC coast;
- (iv) that, in the event of production, export lines from the platforms should be tied into pipelines, as opposed to offloading the oil into shuttle tankers via buoys; and

- (v) that a new BC regulatory regime should separate the regulatory authority for health and safety from the organization that issues the exploration and production licences.

E. Supportive Strategies

To ensure that the affected communities and relevant economic sectors of BC benefit as fully as possible from the introduction of an offshore petroleum industry, the Panel offered five recommendations for the development of preparatory support strategies:

- (i) that, should the BC government decide to begin preparations for offshore exploration, one of its first steps should be to design a strategy for the training of British Columbians for the wide range of job requirements and opportunities associated with these activities;
- (ii) that, at the earliest stage of any offshore oil and gas activity, a strategy be developed for effective participation of First Nations and Northern BC Coastal communities in this new industry;
- (iii) that the BC government consider how to build upon any oil and gas development as the main driver of renewed marine engineering and construction sectors, as well as a broader-based ocean technology industry;
- (iv) that the BC government, at an early stage of any post-moratorium planning, enter into consultations with at least four constituencies – the general public, the Northern coastal communities and First Nations, the research community, and other national and provincial jurisdictions; and
- (v) that the BC government should consider setting up an arms-length mechanism (e.g. through the Province’s educational institutions) that would both provide the general public with periodic summaries or abstracts of the technical literature, written in non-technical language, and receive, interpret and communicate data from local and independent observers.

F. Conclusion

The Panel agreed that there are a number of regional and site-specific gaps or inadequacies of data, knowledge, understanding, infrastructure and capacity, which must be addressed in the early stages following any removal of the moratorium. Yet oil and gas are being produced offshore across the full range of environmental conditions found in virtually every kind of natural environment throughout the world. Clearly there have been steady improvements in the science and technology, and in the regulations governing such activities. Accordingly, it concluded that there is “no inherent fundamental inadequacy of the science or technology, properly applied in an appropriate regulatory framework, to justify retention of the BC moratorium” (Report, p. 50).

At the Dunsmuir Symposium several clarifications of the Panel’s findings were provided. For example, it was explained that the alternative sources of energy referred to included fuel cell and hydrogen power, and tidal, wind and solar power. It was noted that the blanket moratorium had had the effect of discouraging serious research of many kinds in BC coastal waters. There are, of course, legitimate concerns about the hazards involved in BC offshore hydrocarbon development, but it was suggested that there are many other offshore areas where oil and gas activities proceed without major incidents despite the existence of worse hazards. Reference was made to the similar tectonics off the coast of California, and to the coexistence of oil production and a highly productive fishery in Cook Inlet, Alaska, notwithstanding a current effort to impose further controls on the former. Special reference was made to the substantial benefits that had accrued to Newfoundland, and now to Nova Scotia, as a result of the offshore development in that region of the Northwest Atlantic. It was pointed out that other industries, including shipping, fishing and tourism, cause much more pollution of the seas than the oil and gas industry, which is noted for its advanced technology and is one of the most highly regulated of all industries.

Another speaker summarized the history of Canadian drilling in offshore areas: 300 wells on the East Coast, and eighteen in the Hecate Strait/Queen Charlotte Sound area. These coastal marine systems of British Columbia are quite well studied, but it is

necessary to get a clearer understanding of sub-surface conditions with three-dimensional seismic coverage down to 3,000 metres. It would be possible through exploration to reconstruct the geological history of the entire basin off the coast of Northern BC.

There are, admittedly, unanswered questions about the impacts of seismic testing on biota. We need more knowledge on other matters too. Are the conditions right for petroleum formation and occurrence? Is the oil trapped, and of sufficient size to be economical? What are the most serious geo-hazards: earthquakes? tsunamis? slumping? turbidity currents? over-pressured zones, gas hydrates? There are also oceanographic hazards to study: winds, waves and currents, precipitation and storms, and even occasional icing, although there are fewer icing days in BC than on the East Coast. It is also important to consider chemical factors. The oil companies conduct constant research on all these matters, but not in B.C. since the moratorium has been in place. So there is still uncertainty about the risks associated with offshore development in this province.

On economic, political, and social issues, there are no neat “yes” or “no” answers. Some of these difficult issues are being examined by researchers of the Coast Under Stress Project, which is shared by a number of Canadian universities. Canada does a poor job in building an infrastructure for our offshore businesses through development of secondary and tertiary industries in the wake of oil discoveries. We could use some money from oil and gas exploration to invest in alternative energy systems and “green” industries. Japan, for example, is spending \$50 million a year on the feasibility of gas hydrates as a potential energy source. Canada, on the other hand, with the right tectonic setting, is spending zero! Yet according to some estimates, in British Columbia offshore oil and gas could bring in \$3 billion per annum, which would be 2.75% of British Columbia’s current GDP. In short, the most difficult issues are economic, social and political.

Another speaker at the Dunsmuir workshop concentrated on the Scientific Review Panel’s recommendation for an arm’s-length mechanism to communicate with the public. There has been much media coverage about offshore hazards such as the effect of oil drilling or mercury-laden materials on cod and other food fishes. However, media coverage is often inconsistent with the scientific research upon which it draws. Access to such data is limited, and often non-scientists misunderstand the actual findings. He

supported the plea for an arm's-length mechanism to get accurate information out to the public and for communicating with the media. Yet there are also some “genuine effects” of drilling that we should be concerned about, such as the possibility of sub-lethal (e.g. growth loss) effects on marine species as far as 40 km from well locations. We need to do more research also on specific species, such as the several rare (and possibly important) sponge species that might be damaged by offshore oil and gas, as well as fishing, activities in the Hecate Strait area.

Various other points were made in answers to questions raised at the Dunsmuir Symposium. For example, participants were reminded that the cumulative impacts of drilling worldwide are relatively insignificant, if compared with other sources of oil pollution (e.g. onshore activities, natural seepage, and shipping casualties). Since the oil industry is a global phenomenon, operating standards are uniform, maintained essentially on the basis of strict governmental regulations and industrial codes, which reflect “best practices” around the world. It was suggested that fears of industry bias in offshore science are probably exaggerated. Nevertheless, efforts to allay public mistrust would require taxpayers to bear the cost of a government monitoring system such as exists in the fishing industry. Offshore development should not proceed until baseline research has been done, and normally this kind of research is financed with public funds. Some participants argued that it is not realistic to expect industry to undertake research before they get approval for exploration. Difficult questions remain to be answered about the “recovery” of an ecosystem after a major spill. Exxon still monitors the area affected by the Exxon Valdez spillage of 1989. It should be recalled, however, that to-day almost all major spills are caused by shipping accidents, not by offshore platform activities. Radar technology is now available to monitor natural seepages as well as accidental spillages and intentional discharges.

III Energy Policy Options

As noted above, the first recommendation of the Scientific Review Panel was that a provincial government decision on the existing moratorium policy should be taken with a view to “provincial priorities in the larger context of a provincial energy policy”. In the

summer of 2001 the B.C. government appointed a five-member Energy Policy Task Force to develop a “comprehensive long-term energy policy” for the province. At the time of this writing (August 2002) the final report of the Task Force had not yet been made public, and in any event its mandate was written in such a way as to exclude consideration of the role that offshore hydrocarbon development should play within the overall framework of provincial energy policy.

However, one of the panels at the Dunsmuir Symposium in May 2002 undertook to review current thinking about provincial energy policy, based in part on the Task Force’s interim report and partly on the final recommendations of the Scientific Review Panel. Before a summary of the discussion is provided, it might be useful to offer a number of preliminary observations.

First, it is somewhat artificial to approach such a difficult and complex problem as energy policy from the perspective of any one Canadian province, or any other sub-national jurisdiction. The energy policy options of British Columbia are inextricably linked with those of other provinces, and Canadian national energy policy, monitored by the National Energy Board of Canada, is likely to become integrated in some degree with the national energy policy of the United States.

Second, although it is still too early to envisage clearly the elements of continental energy policy, it is safe to assume that future formulations of it will exhibit the influence of competing priorities: economic, environmental, social, and of course political. It is difficult to predict how sensitive the energy policy of the highly affluent countries of North America will be to the environmental, social and health problems of the poorest countries, such as the problem of air pollution in the overcrowded cities of the developing regions.

Third, global energy policy is almost invariably discussed against a historical background of transitions from wood to coal to oil, as the chief energy foundation of economic systems. All industrial and post-industrial economies still depend very largely on coal or oil, or both, despite the mounting scientific evidence of the long-term impacts associated with carbon emissions into the air. There is still an abundance of both coal and hydrocarbon all over the world. Most estimates of the total world supply of both have proven over the years to be gross underestimates. But the future scale of global fossil fuel

consumption will not be determined solely by considerations of supply and demand: the emergence of new technology will play at least an equal role.

Fourth, environmental, social and health-based objections to the use of fossil fuels might be met in two technological ways: by finding new ways of producing energy from fossil fuels without the release of carbon dioxide (CO₂); and by developing new sources of energy such as fuel cell technology designed to replace coal and hydrocarbon with hydrogen as the primary energy component of to-morrow's post-industrial economy. As argued recently (The Economist, July 6-12, 2002, pp. 11, 78-79, and A Survey of the Global Environment), the immediate problem of air pollution and the long-term problem of global warming might prove to be reducible to acceptable levels if current experiments in the capture and "sequestration" of CO₂ in fossil fuels prove successful. According to The Economist, sufficiently significant progress in this research is being made to attract the interest of large-scale investors. At the same time, fairly dramatic progress is also reported out of the research community on the fuel cell technology front. It seems likely that the U.S. automobile industry will lead the way in the replacement of the internal combustion engine, and that other major manufacturers of vehicles will follow, probably all within the first decade of the 21st century.

Fifth, it may be assumed that while these new technologies are being developed, efforts will also be made to create viable energy systems based on renewable resources such as wind, wave, tidal movement, and heat differential in the ocean (ocean thermal energy conversion). Each of these modes of energy production has its proponents and pilot projects. Although none could replace coal and hydrocarbon on the scale of fuel cell technology, some of them might prove to be economically feasible as part of a global "package" policy designed to solve energy problems in a variety of ways.

At the Dunsmuir Symposium the energy policy questions facing the B.C. government were described as "very difficult". The current government is market-oriented, and may wish to leave energy investment decisions to the private sector, but such a policy would require splitting B.C. Hydro into "core components". A movement to market pricing would be controversial, but already the private sector in B.C. is driving energy priorities in the direction of "alternative energy": that is, away from the traditional

and non-renewable sources of dirty fossil fuels. Carbon emissions will have to be reduced, regardless of whether Canada ratifies the Kyoto Protocol.

The second speaker discussed the need for market reform in the energy field. The position that British Columbia finds itself in cannot be compared with that of California, for example, but if we are to build energy exports to the United States, we will have to adapt to the U.S. policy environment. Pressures to reform the energy market are continent-wide, and it is essential for both the public and private sectors of B.C. to have a better understanding of these pressures. A more competitive market will bring greater profits, but, admittedly, there would be a “public relations problem” explaining how higher prices can benefit consumers. It would be a mistake, he argued, for B.C. to continue to rely on hydrocarbons. B.C. Hydro should take up the opportunity to develop green technologies.

Another participant stressed the importance of “detoxifying the global energy system”. He explained some of the technical (sequestration) options being developed for extracting the chemical energy from fossil fuels while capturing the potentially toxic by-products. These options include: (i) conversion to solids; (ii) disposal of CO₂ in oil and gas wells to enhance recovery rates; (iii) placement of gases in ocean bottoms; and (iv) injection of gases into saline aquifers (which is being done in Norway where CO₂ removed from natural gas is being dumped into an underground aquifer). If chemical by-products can be managed, he pointed out, we might have to change our notion of fossil fuels as a toxic energy source. There is still a huge world-wide supply of fossil fuels, perhaps 1,000 years of coal, 200 years of natural gas, and 100 years of oil. Storage of CO₂ in deep saline aquifers could last about 1,000 years. So detoxified fossil fuels have a very high potential, although cost and perceptual issues still have to be addressed.

The same speaker suggested that the nuclear option would not fare well competitively over the next 20-50 years. Perceived problems in siting, costs, and risks have not yet been worked out. The costs of renewable energy production, on the other hand, have come down, and there is high density potential in that sector, where dramatic breakthrough can be expected in the near future, especially in the solar energy sector. Soon, for example, roofs in sunny regions may be made of photovoltaic cells.

In the discussion that followed, one participant suggested that Canada has an opportunity for “moral leadership” in investing its expertise in alternative sources of energy. Canadian greenhouse gas emissions, for example, are much smaller than those in the United States, China, and Russia, even on a *per capita* basis.

Another argued in favour of reconsidering the benefits and costs of nuclear energy, which is of course “clean”, but it was admitted that the nuclear industry has a public image problem. This led to an exchange of views on how to deal with the public perception of risk, which is sometimes viewed as a misconception in the scientific community.

Different positions were taken on the merits of tidal and wave power in general, or at least within the setting of B.C. offshore waters. One scientist present described the proposal for wave power generation off the B.C. coast as “very silly”, since it does not consider the environmental consequences of building a head, which needs a dam or some other structure. Tidal power proposals were characterized as “slightly silly”. The majority opinion seemed to be that the benefits available from these options would be modest when compared with the economic and environmental costs or risks involved.

Support was voiced for a carbon tax, which would “move people toward solutions” of these difficult energy problems.

IV First Nations Claims and Revenue-Sharing Entitlements

The issues of offshore development cannot be addressed without regard for the claims and entitlements of the indigenous people of British Columbia. “Indigenous peoples” are groups within a larger population, usually with a distinct ethnic tradition, that possessed autonomy over their traditional lands before the arrival of other groups as a result of invasion, migration, or colonization. That indigenous peoples have special entitlements is widely accepted throughout most of the world community, and is reflected in the emerging international law of human rights, which treats them as a distinct category. But the process of global normative development in this field is very slow. Many states accept the legitimacy of special rights for indigenous groups as “peoples” or “nations”, but the status of “sovereignty” and the possession of “jurisdiction” are seen as prerogatives only of “nation-states”.

The universality of these issues is captured in a growing number of international instruments: for example, the International Labor Organization's Convention No.169 (the Convention on Indigenous and Tribal Peoples); the Convention on the Rights of the Child; the Rio Declaration on the Environment and Development; Agenda 21; the Convention on Biological Diversity; documents of the UN Commission on Human Rights; the Committee on the Elimination of Racial Discrimination, and the Organization of American States; funding guidelines by the World Bank, the United Nations Development Programme, and the Asian Development Bank; and various international judicial decisions. In a variety of fora, efforts are being made to reach global agreement on the specific nature of the entitlements of indigenous peoples.

At the national level in many countries attempts have been made for over a century to resolve issues of indigenous entitlements both through litigation and legislation. Indeed in the United Kingdom "aboriginal rights" were recognized as long ago as the 17th century. In Canada the courts have dealt with "aboriginal rights" and related issues since the 1880's, when the Privy Council in St. Catherine's Milling and Lumber Co. v. The Queen (1888) referred to the Royal Proclamation of 1763 as the basis of "Indian title". Since then, however, the courts have held that aboriginal rights (including aboriginal title) are inherent, and do not derive from any one act or agreement. In Calder v. British Columbia (Attorney-General) (1993) six of the seven justices of the Supreme Court of Canada accepted that the area claimed by the Nishga'a Tribal Council and four other bands had been inhabited by the claimants' ancestors "since time immemorial ... where they hunted, fished and roamed". Since then aboriginal title has been judicially linked with the historic occupation and use of land.

In section 35 (1) of the Constitution Act of Canada (1982) "[e]xisting treaty and aboriginal rights are ... recognized and affirmed." The term "aboriginal rights" may encompass not only title to the land itself, but also: (i) site-specific aboriginal rights where the exercise of the right is tied to a particular piece of land, although the community does not hold aboriginal title to that land (e.g. the right to fish or hunt in a particular area); and (ii) aboriginal rights to carry out certain activities that are not linked to any particular land area. It remains for the judiciary in the years ahead to clarify the nature and extent of aboriginal rights in all three categories.

In February 2002 the Haida Nation filed an aboriginal title claim to the seabed area under Hecate Strait, between Queen Charlotte Islands (Haida Gwaii) and the mainland of Northern British Columbia. Since no Canadian court has so far commented on the applicability of the doctrine of aboriginal title to submerged lands, this lawsuit introduces a new issue concerning the special entitlement of First Nations in this country. It remains to be seen what kinds of evidentiary tests will have to be satisfied in order to establish aboriginal title in a seabed area, but if this effort is successful then presumably any effort by government to restrict or regulate the First Nations in the exercise of such rights would represent an infringement of aboriginal title.

Because of the potential importance of this issue in the context of B.C. offshore development policy, the subject of First Nations claims and revenue-sharing entitlements was the subject of extensive discussion at the Dunsmuir Symposium. As explained by one of the lead speakers, the history of the first contacts between the Haida people of the Queen Charlotte Islands region and seafaring visitors is well documented. In 1774, four years before Captain Cook visited the west coast of Vancouver Island, Juan Jose Perez Hernandez traded with the Haida when he re-provisioned his ship, the Santiago, with fresh water. But these islands did not attract much attention from later settlers until 1850 and 1851 when the Hudson's Bay Company (HBC) at Fort Simpson reported to Governor Richard Blanshard in Victoria that the Haida were finding gold. When the Company attempted mining on their own they met with considerable Haida resistance. In 1852 American gold seekers began to arrive, and they met with similar resistance. These events led the Colonial Office in London to declare the Queen Charlotte Islands British territory and to appoint the second Governor of Vancouver Island, James Douglas, to the new office of Governor of the Queen Charlotte Islands. Douglas asserted the rights of the Crown to the gold, but the HBC were preoccupied with the fur trade. Subsequent government actions focussed on the need to prevent the Americans from taking the gold, and the Haida continued to mine the ore without official (colonial) intervention.

After Confederation it became clear that, whatever the law might be, BC would not cooperate in any process designed to recognize and extinguish Indian title by treaty, nor would the province countenance establishing Indian reserves as large as those that were being set aside elsewhere in the Dominion. A compromise was reached when

Ottawa agreed to sideline the aboriginal title issue if BC would agree to establish a joint commission that would have authority to allot Indian reserves. This was done, and in the 1880's reserves were set aside for the Haida in the Queen Charlottes. The survey of the islands by George Dawson in 1878, just before the reserves were allotted, noted that there was extensive evidence of Haida use and occupation of ocean spaces and a developed system of territories that included both land and water.

Although most of the reserves that exist today were set aside in this period, a second reserve commission – the McKenna-McBride Commission – had to be established in 1912 to address a number of the problems left outstanding by the first. Once again, BC refused to address the aboriginal title issue, and Ottawa, once again, gave in - the commission would deal only with the number and size of the existing reserves.

But the title issue had not gone away, and this fact was made clear to the new Commission when it came to Skidegate in the Queen Charlottes in September of 1913. Amos Russ (a very senior chief who was perhaps the first Haida leader to convert to Christianity) and the other chiefs made at least two points. The first was that, when the reserves were laid out, the Haida had been promised that these lands would be theirs forever and that “no man could touch them”. How then, the chiefs wanted to know, could this new Commission reduce any of them? Their second concern was also posed as a question. In 1913 the Haida were pressing their aboriginal title claim to all their territories, and were even trying to get their case before the Judicial Committee of the Privy Council. So they wanted to know whether cooperating with the Commission would in any way prejudice their aboriginal title claim. Since aboriginal title was not within their mandate, the Commission was not prepared to give them the assurances they sought. So the Skidegate Haida refused to take any further part in the hearings.

Further efforts to pursue land claims were made in succeeding years until they were, in effect, banned by Parliament in 1927. The practice resumed when the ban was lifted in 1951, but the Haida were not as quick off the mark as other claimants. Disillusionment with lawyers and courts seems to have induced them for many years to refrain from pressing their claims through litigation. Over the last 5-6 years, however, the Haida strategy has changed, and they have won two significant court cases involving logging rights. Soon after winning the second – Haida Nation v. B.C.(Minister of Forests)

(2002) – the Haida issued a writ claiming aboriginal title over all of Haida Gwaii, as well as Dixon Entrance to the north, Hecate Strait east to the mainland, south “halfway to Vancouver Island”, and 320 kilometres (200 nautical miles) west including the inland waters, the seabed, and the sea (“the area of interest”). The claim, therefore, extends as far as the seaward limits of the 200-mile exclusive economic zone (EEZ), over whose resources Canada has sovereign rights and jurisdiction under international law off its Pacific coast. In taking this action, the Haida were not only demonstrating their frustration with the B.C. treaty process: they were expressing a definite preference for litigation.

The Haida people also claim that there is a legal obligation on governments to consult with them before undertaking any development in the area of interest over which the Haida people claim to hold aboriginal title. The prospect of lawsuits resulting from claims of aboriginal rights or title will contribute to industry’s reluctance to commit resources to any part of the area of interest. One might argue that there is no obligation on the Crown to obtain consent from the Haida people to exploring offshore hydrocarbon resources in the area of interest until the Haida people have obtained a court judgment. In the second logging case of 2002 (Haida Nation v. B.C. Minister of Forests), however, the B.C. Court of Appeal held that the obligation to consult did arise prior to getting a court judgement. As a matter of political judgment, it might be unwise for the B.C. government not to consult. However, the question of a legal obligation to do so prior to judicial action is being appealed to the Supreme Court of Canada. In any event, a claim to offshore rights raises issues not covered by the B.C. Court of Appeal in the logging case.

Treaty negotiations in BC are likely to resume at some future date. Until those negotiations are concluded, the federal government, the BC government and First Nations must find a way to balance their conflicting interests on jurisdictional issues. The current position of First Nations on the proposed petroleum development project is viewed by many as significantly influential, if not equal to that of the governments. One of the options is for the parties involved to co-manage the area of interest under a tripartite governing body. Another option might be to let regional First Nations manage the area in a transparent manner, so that the governments can monitor the process in the general public interest. If these options are not feasible, First Nations should at least become

centrally involved in the consultation process on any proposed projects in the offshore area.

In the present climate of uncertainty, it is hard to determine a revenue-sharing option that would satisfy all three parties that claim the area of interest as their own. Particularly the sensitive issue of land claims to the Queen Charlotte Islands (Haida Gwaii) complicates the effort to achieve consensus on the offshore issues. Should the revenue be divided on the basis of population? What other factors should be considered to adjust the amount of revenue sharing? For example, since the aboriginal population of BC is around three percent of the total population, First Nations might be entitled to get three percent of the revenue plus perhaps an additional amount for environmental and cultural risks assumed by them. If this becomes acceptable, should existing federal government programmes for funding and transfer payments to First Nations continue?

It was suggested by one of the Dunsmuir participants that the Haida Nation and other aboriginal communities are seeking not only revenues but also influence and the right of participation: some degree of control over the nature, pace and location of offshore development, and in effect a management or co-management role in any system of production that might have their approval. Such a role does not necessarily mean involvement in the day-to-day operations. Various revenue-sharing and co-management models elsewhere were identified. Judicial decisions are not necessarily influential on the outcome of land claims negotiations. The Delgamuukw decision, for example, had little impact on the Nisga'a settlement. Judges, it was argued, should be careful not to stray too far into the domain of innovative public policy formation. The oil and gas industry has a lot of experience in deal-making, and can be quite flexible; and so also perhaps can the other parties at the table.

It should be noted that the Oceans Act of Canada requires collaboration on various issues with "affected aboriginal organizations" and "entities established under land claims agreements". So even if an aboriginal title claim to the seabed were to fail in court, it is established federal policy to seek the involvement of First Nations and other coastal communities in various aspects of ocean management. Therefore, these provisions provide additional legal support for the claim of First Nations to be part of any coastal management process independently of the title issue.

Some of the legal, political, and ethno-cultural issues related to aboriginal rights and offshore development that arise in British Columbia have already surfaced elsewhere. Comparisons between Canadian and Australian experience, for example, have been made at meetings of the Australian/Canadian Oceans Research Network (ACORN). The Australian High Court's decision in the famous Mabo case of 1992 has been closely studied in Canada, as has the Australian Federal Parliament's legislative response to it, the Native Title Act of 1993. Yet, as in Canada, negotiating agreements within the new Australian legal framework has proved difficult, raising the prospects of more expeditious settlement by recourse to "native title mediation".

Throughout the Dunsmuir discussions a number of points were made. First, it was emphasized that a process of frequent and meaningful consultations with the First Nations must be maintained by government, industry, and other stakeholders, both before and during the various stages of offshore exploration, development and production. Second, the principal purpose of such consultations is to get the relevant First Nations meaningfully involved in decision-making, revenue-sharing and management operations. Third, tri-partite relationships must be worked out together on the basis of mutual benefit. Fourth, a special leadership role, it was suggested, falls upon the government of British Columbia. Fifth, an effective offshore development policy of the BC government can only be realized and implemented through inter-agency coordination within the Province, and this underlines the need to learn from the experience of Newfoundland and Nova Scotia in this context. Finally, the public policy debate on offshore development must be shared inclusively with the general public of British Columbia.

Numerous other points were made by individual speakers. For example, several noted some of the legal difficulties that would arise if Haida (and other First Nations) entitlements were dealt with generically in terms of "title" or "jurisdiction", which, of course, are concepts of non-indigenous origin. Such an outcome would be anomalous, given that aboriginal rights issues arise from the merger of "two vastly different legal cultures". A judicial confirmation in terms of "title" would carry economic implications certain to reduce provincial entitlement, and, in the absence of special negotiated arrangements, perhaps also the entitlement of private rights-holders under common law. An outcome in terms of "jurisdiction" would also create difficulties under both

international law and Canadian constitutional law. Under both legal systems, government (especially federal) has clearly established rights and responsibilities related to the regulation of ocean-based activities. Those nervous of creating new legal complexities would have most reason to favour a more focussed outcome derived from a negotiation process designed to give careful thought to the consequences for all parties concerned.

In light of these difficulties and uncertainties, it is probably agreed by most that the British Columbia rulers of the 19th century made a “terrible mistake” in refusing to negotiate aboriginal treaties. No doubt the First Nations have been the victims of that mistake, but to-day the price to be paid will have to be more widely shared. The latest effort to deal effectively and equitably with the issues inherited from the past is the package of federal legislation introduced in June 2002, which in B.C. must be addressed in light of the results of the B.C. government’s referendum on guiding principles for treaty negotiation with First Nations. Much of the proposed federal legislation is concerned with a radical revision of the Indian Act, which is administered by the Department of Indian Affairs and Northern Development (DIAND). In the context of land claims, the most relevant innovation would be the creation of a commission mandated to mediate land settlement disputes between First Nations bands and the federal government. It is hoped that this new procedure will help to expedite the settlement process, which is overwhelmed by the volume of claims in the present system – allegedly around 550, which under present procedures would take at least 30 years to clear up. Should the proposed commission fail to reach a settlement through mediation, the parties could refer the dispute to a tribunal authorized to make binding awards of up to \$7 million in each case.

The current Haida claim to the Queen Charlotte Islands and adjacent seabed areas clearly does not belong to this category of disputes. Moreover, this legislative initiative has been criticized by some First Nations leaders. Yet the new legislation, if adopted, would surely help to speed up the entire process of claims settlement, and might relieve the judiciary of a burden of responsibility that many believe belongs essentially to the political domain. If the new system comes into force, it might be hoped that new issues such as those related to offshore waters and seabed areas could be addressed more expeditiously through *ad hoc* negotiation procedures. Much may depend on whether the

final version of this proposed system of settlement is perceived to violate constitutionally protected native rights.

V. Recent Developments

Since the Dunsmuir Symposium in May 2002 it has become clearer than ever that many issues have to be resolved before offshore exploration in British Columbia can proceed. Talks between the Canadian and B.C. governments have begun, and some announcements have been made. For example, the decision has been taken to extend, in amended form, the Canada-B.C. Agreement for Environmental Assessment that had expired on April 16th, 2002. Under this proposed extension, projects triggering environmental assessment procedures by both governments will be subject to a single coordinated review following the B.C. process (and reflecting BC. timelines). However, the new provincial legislation was introduced without public consultation and is considered controversial. To the extent that the regime is more limited in scope than its predecessor and essentially discretionary instead of mandatory, it may be questioned whether this modified legislation will be sufficient to satisfy the requirements of Canadian federal legislation.

Meanwhile, after release of the Scientific Review Panel's report, in April 2002, a \$2 million dollar preparatory programme on offshore development planning was granted to the University of Northern British Columbia by the B.C. Ministry of Energy and Mines. There has also been media speculation that the federal and B.C. governments were discussing a major joint initiative designed to meet the offshore scientific requirements identified by the B.C. Scientific Review Panel, but by the end of August no official confirmation of this intention had been announced.

Also delaying action on the B.C. offshore development issues is the complexity of national energy policy planning at the national and continental levels. The federal government's policy on B.C. offshore development is related to its policy on Canadian Arctic offshore development, which in turn is complicated by the highly divisive issues of pipeline development, location and financing. Canadian national energy policy must be thought through very carefully in light of U.S. strategic energy requirements, Canadian export opportunities, and sensitive trade disputes between the two countries.

Not the least of the Canadian government's dilemma on offshore development is how to reconcile the differing viewpoints of several federal Departments: especially Natural Resources, Environment, Fisheries and Oceans, Industry, and Indian Affairs and Northern Development. Since the Dunsmuir Symposium two major policy documents have been published by Fisheries and Oceans Canada under the rubric "Canada's Oceans Strategy: Our Oceans, Our Future". The first is the principal document of that title, and the second is entitled "Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada".

These documents represent the policy of the Canadian government, not merely of DFO, but the inter-agency consultation required has resulted in nuanced language. For example, Canada's commitment to the precautionary approach to ocean management, as proclaimed in the Oceans Act, is re-articulated but in modified language ("erring on the side of caution"). Commitment to the "ecosystem approach" is supplemented by commitments to "stewardship" and the need for public awareness activities, but Canada's Oceans Strategy also supports "sustainable economic opportunities" that can be derived from the ocean areas under Canadian jurisdiction. Included in the list of these opportunities is "offshore energy and mineral resource development", and it is noted that "offshore energy developments are directly and indirectly helping to transform economies in many communities on the east coast and in the North". [Canada's Oceans Strategy, at pp. 14-15]. It is noted that "conflicts are becoming more common over the most effective and sound uses of ocean space, most particularly in the near-shore.... These challenges reinforce the need for the principles of integrated management, sustainable development, and the precautionary approach to support the sustainable economic opportunity objective." [ibid., at pp. 15-16].

In the second DFO document referred to above, emphasis is placed on the need for collaboration through "integrated management": collaboration among: (i) federal authorities; (ii) provincial, territorial and regional authorities; (iii) aboriginal organizations and communities; (iv) industry and resource users; (v) non-governmental organizations; (vi) community groups; and (vii) the academic; science and research community. [Policy and Operational Framework, pp. 12-14]. The DFO concept of "integrated management by areas" consists of two sub-sets: "large ocean management

areas” (LOMAs) and “coastal management areas’ (CMAs) [*ibid.*, pp. 15-20]. Presumably the Queen Charlotte Sound could be envisaged as a CMA that would become subject to an “integrated management plan”. Meanwhile, the 30-year-old promise to identify environmentally sensitive areas in the British Columbia offshore remains largely in limbo, it seems, although one key step has been taken with DFO’s announcement that effective July 19, 2002 groundfish trawling will be closed in the four sponge reef areas in Hecate Strait that were of particular concern to the Scientific Panel. The designation of the first Marine Protected Areas under the Oceans Act is still awaiting formal approval., while the Canada National Marine Conservation Areas Act, which envisages a possible MCA in Hecate Strait, finally received Royal Assent on June 13, 2002.

External events continue to move swiftly. In the aftermath of the World Summit on Sustainable Development, and the new priorities likely to emerge in the Chretien legacy agenda to 2004, federal, provincial and inter-governmental discussion of offshore development will take place in a rapidly-evolving national, continental and global context. Both strategic and technical issues remain to be faced, and MASC anticipates promoting further deliberation around the substantive and procedural questions with which coastal communities in British Columbia must grapple.

BRITISH COLUMBIA OFFSHORE
HYDROCARBON DEVELOPMENT

REPORT OF THE SCIENTIFIC
REVIEW PANEL

January 15, 2002

BRITISH COLUMBIA OFFSHORE HYDROCARBON DEVELOPMENT:
REPORT OF THE SCIENTIFIC REVIEW PANEL

A report in two volumes

(Volume II: BRITISH COLUMBIA OFFSHORE HYDROCARBON DEVELOPMENT: VOLUME II –
APPENDICES TO THE REPORT OF THE SCIENTIFIC REVIEW PANEL)

Submitted to the BC Minister of Energy and Mines, Hon. Richard Neufeld

January 15, 2002

Panel Members:

- David Strong (Chair) David Strong is Professor in the School of Earth and Ocean Sciences at the University of Victoria. He was President and Vice-Chancellor at the University of Victoria from 1990 to 2000. He serves on the governing council and the executive committee of the National Research Council of Canada and the Research Council of the Canadian Institute of Advanced Research. Strong is the past Vice-President of Memorial University in St. John's, Newfoundland, where he was also special adviser to the President. He was a Member of the Standing Advisory Committee on University Research of the Association of Universities and Colleges of Canada, and served on British Columbia's Advisory Council on Science and Technology and the Newfoundland and Labrador Advisory Council on Science and Technology, among others.
- Patricia Gallagher Patricia Gallagher is Director of Continuing Studies in Science and Director of the Centre for Coastal Studies at Simon Fraser University. She was a Professor of biology at Memorial University and is co-editor of a volume on marine conservation, *Waters in Peril*. Gallagher participated in the North American Commission for Environmental Cooperation workshop on aquatic invasive species in the spring of 2001. Gallagher has a PhD in bioscience from Simon Fraser University.
- Derek Muggeridge Derek Muggeridge is Dean of the Faculty of Science at Okanagan University College, where he is also Associate Vice-President of Research. He is President of Offshore Design Associates Ltd., which provides specialist services in offshore safety and wave and ice structure interaction. Muggeridge is a Member of the Awards Committee of the Science Council of British Columbia and a Member of the Canadian National Committee / Engineering Committee on Oceanic Resources. He was the Director of the Ocean Engineering Research Centre at Memorial University. Muggeridge has a Bachelor of Science from California State Polytechnic University, and a Master's of Science and a PhD in aerospace engineering, both from the University of Toronto.

BRITISH COLUMBIA OFFSHORE HYDROCARBON DEVELOPMENT

Executive Summary

On October 19, 2001 the British Columbia Minister of Energy and Mines appointed this panel to advise on four particular matters:

- i) *“the scientific and technological considerations relevant to offshore oil and gas exploration, development and production;*
- ii) *“further research or studies that should be undertaken to advance the “state of knowledge” on these considerations;*
- iii) *“any specific government actions that should be taken prior to a decision on whether or not to remove the current provincial moratorium; and*
- iv) *“any specific conditions or parameters that should be established as part of a government decision to remove the moratorium.”*

Our response to the first two items forms the core of this report, based upon extensive reviews of previous reports and scientific literature, as well as a number of specially commissioned reports.

We identify a number of important knowledge gaps on which “further research or studies should be undertaken to advance the state of knowledge on these considerations”, to allow for responsible “scientific and technological considerations relevant to offshore oil and gas exploration, development and production”. In response to items (iii) and (iv) of our mandate, we provide some observations on the science and technology-based, but not inherently science and technology, issues of public policy related to matters such as capacity-building, regulation and monitoring.

The basic messages from this review are:

- A. The prospective areas for oil and gas offshore British Columbia have many similarities with other jurisdictions around the world, and there is much to be learned from their experience. While BC is unique in the particular combination of components of its marine ecosystem, resources and coastal heritage, most of these can be found individually or in other combinations in other areas of offshore production. For example, eastern Canada and Alaska have a more severe climate; the Cook Inlet of Alaska is more confined; Alaska and California generally experience more severe earthquakes. Nevertheless, any offshore activities in British Columbia, at least in the inland waters between the Queen Charlotte and Vancouver Islands, would be near-shore activities, and any adverse environmental impacts would be quickly felt in coastal communities and habitats, and so would require rapid response and remediation.
- B. Although the region is seismically active (Chapter 2), that is not considered to constitute any overwhelming risks for offshore exploration, development or production (Chapter 4).
- C. Although risks of direct impacts on marine ecosystems may be small, there is poor understanding of potential long-term cumulative impacts on marine ecosystems of oil or gas spills or discharges from production activities, or of the impact of seismic exploration on marine mammals in particular and the ecosystem in general. These potential impacts may be of very low probability but may be catastrophic in the short term and carry serious and possibly irreversible consequences in the long term (Chapter 3).
- D. Although the region is subject to intense storms as well as seismic activity (Chapter 2), present engineering knowledge, technology, industry practice and regulatory regimes can ensure that structures necessary for drilling and production activities are constructed to survive any foreseeable natural threats and to operate within acceptable standards (Chapters 4).

The panel is aware that in dealing with such matters as the cumulative impacts of human activities on marine ecosystems, the BC and Canadian governments have committed themselves to adopt a precautionary, ecosystem-based approach to integrated adaptive management. This panel endorses the Wingspread formulation of the precautionary principle, but also underlines the observation in the December 17, 2001 Lowell Statement on Science and the Precautionary Principle that emphasizes, “*The goal of precaution is to prevent harm, not to prevent progress.*” (See Appendix 20 in Volume II of the Report)

The remaining issues identified above can best be addressed in a concrete setting in assessment of proposals for specific activities to be undertaken, not in abstract or general terms. The panel concludes on the basis of its review that the existing blanket moratorium has served its purpose, but has also set back our understanding of the coasts and oceans of British Columbia. It is time now to return marine scientific research to levels appropriate for a modern advanced society in general terms, and particularly as a basis for comprehensive, balanced and inclusive deliberation and assessment of specific proposals for BC offshore activity.

In short, the panel endorses the concerns expressed in the JWEL and preceding reports about the possible impacts of exploration or drilling activities on marine ecosystems and associated human communities, but sees this concern not as an argument for a general prohibition on all offshore activity—that is, for maintenance of a blanket moratorium—but rather as a need to examine specific proposals for any human activities, including offshore hydrocarbon-related activities, carefully with respect to their location, timing and impacts on particular species or components of marine ecosystems over the long term, and against broadly conceived alternative strategies (Chapter 5).

In order to consider the science and technology dimensions of any decision on whether to remove the moratorium, the Panel was obliged to ask what the moratorium actually is, how it could be removed, and what would be the situation subsequently. These questions are not straightforward, but we believe the short answer to be, as the dictionary says, that the present moratorium is a temporary prohibition or suspension of an activity, in this case of activities related to exploration for hydrocarbon resources offshore British Columbia. It appears that the current moratorium could be ended simply with a provincial decision to that effect, and a federal announcement agreeing that bids for licenses or applications for permits to undertake exploratory work in specific parcels of offshore areas would be considered.

Thus, in the panel’s understanding of the situation, it seems there actually is today no legislated moratorium formally in place, either federally or provincially. For the panel, the central point seems to be that the concerns with this ‘current moratorium’ are all procedural and perceptual, not scientific or technical. The sooner the Province can move on to careful consideration of concrete proposals from identifiable proponents, the sooner we will get into constructive assessment of the issues based on the scientific, social and ethical realities of the sea in its actual setting.

Were the present moratorium ended, any further action would presumably await concrete expressions of interest in the development potential of specific sites. There would be several important things that would need to be done before there could be any expectation of investor interest, public or private, in proposals for exploration or development work in the BC offshore. While they are not strictly scientific or technical issues, they are germane to points (iii) and (iv) of our mandate, and we endorse the following preconditions that have been spelled out already by industry, First Nations, and others. These include:

- Development of an integrated federal-provincial regulatory framework. (The panel is aware that the Canadian Environmental Assessment Act and the British Columbia Environmental Assessment Act are undergoing review and amendment, and that the existing Canada-British Columbia bilateral accord on harmonized assessment expires in April 2002 and must be renegotiated.)
- Negotiation of a Pacific Accord that provides for agreed federal-provincial revenue sharing and other fiscal and management arrangements.

- Clear delineation of sensitive or vulnerable areas essential to preserve biodiversity and ensure ecosystem integrity, so that industry and others will be able to develop proposals for offshore activity with a clear initial understanding of any boundary conditions or restrictions.
- Strengthening and development of scientific and technical capacity to build baseline data and assess the state of the ecosystem, including natural and human components, and capacity also to undertake quantitative risk analysis, valuation and assessment spanning the full range of strategic options.

Thus, in the above context, the decision as to whether or not to remove the present blanket moratorium seems to be again one of procedure, more than science and technology.

To the general question posed to it, therefore, this panel concludes overall that, while there are certainly gaps in knowledge and needs for intensification of research as well as for a commitment to building comprehensive baseline information systems and to long-term monitoring, these do not preclude responsible deliberations on the questions related to offshore oil and gas exploration and development. There is no inherent or fundamental inadequacy of science or technology, properly applied in an appropriate regulatory framework, to justify a blanket moratorium on such activities. With a firm commitment to comprehensive assessment of any proposals for specific offshore activities as provided in the existing legislative framework, and continuing commitment to ongoing principles of adaptive management and sustainable development, the existing policies maintaining an ongoing moratorium on hydrocarbon exploration and development offshore British Columbia can responsibly be ended.



MASC Symposium

“Current Offshore Policy and Related Issues”

- Place:** Dunsmuir Lodge (University of Victoria), Sidney BC
- Date:** Saturday May 11th, 2002
- Format:** A private, invitation only, discussion designed for MASC Board Members and invited guests.
- Purposes:** To brief participants on the current status of key issues addressed in the MASC-supported Scientific Review Panel on offshore hydrocarbon development, and to provide an informal forum to review other current public policy issues related to the uses and management of the offshore waters of British Columbia.

Programme

Morning	Afternoon
9.00 <i>Welcome to Symposium</i> • Jim Boutilier, President – MASC	1.45 <i>Session III</i> (Chair: Douglas Johnston) <i>“First Nations’ Claims and Revenue-Sharing Options”</i>
9.15 <i>Session I</i> (Chair: Rod Dobell) <i>“Offshore Science: Knowledge Gaps and Technical Requirements”</i> <i>Lead Speakers:</i> • David Strong (Chairman, BC Offshore Hydrocarbon Scientific Review Panel) • Walter Cretney (Institute of Ocean Sciences, DFO) • Michael Whitarcar (UVic)	<i>Lead Speakers:</i> • Hamar Foster (UVic) • John Borrows (UVic) • Catherine Parker (Arvay Finlay, Barristers) • Eric Denhoff (Western Policy Consultants)
11.00 <i>Break</i>	3.30 <i>Break</i>
11.20 <i>Session II</i> (Chair: Catherine McDonald) <i>“Energy Policy Options for BC”</i> <i>Lead Speakers:</i> • Mark Jaccard (SFU)* • Pierre Pineau (UVic)	3.50 <i>Session IV</i> (Chair: Jim Boutilier) <i>“Prospective Canada-British Columbia Offshore Arrangements: Round Table Discussion”</i>
12.30 <i>Lunch</i>	5.00 <i>Adjournment</i>