Introduction

My intention is to focus on the development of energy resources – the upstream end of the flow of energy. So within my scope are oil and gas, minerals like coal and uranium, but also geothermal energy, and water. Minerals have particular characteristics in being hidden until found by exploration. Water is a particular case because it is such a key part of the natural environment. For energy purposes water is important for hydro electric generation and for the cooling of electricity generation equipment.

I will give a brief overview of the ownership of minerals, their disposition and development, and then shift to the law concerning environmental and social issues arising out of such development – essentially the environmental law that applies. These are two huge fields of study, but I hope to offer some insights about the kinds of law you as legislators might want to see and to provide. What I have to say is necessarily very general; I am not trying to describe the law of any one country, or how it should be. At the foot of this paper I provide a short bibliography, with references to materials that may be useful to a reader who wants to pursue any of these issues in more detail. Throughout, the theme of risk and how to deal with it is important; and so is the theme of integration of development and environmental concerns.

The development of natural resources presents some special challenges. Natural resources are both the wealth of a nation, second only to its people, and normally one would expect that natural resource development is of great benefit to a nation. And indeed often it is. But in fact there are many examples where natural resources development has brought great difficulties to a country. This is paradoxical. A great deal has been written about the ‘resources curse’ and the propensity of natural resource development to cause disruption to a country’s economic, political, social, and environmental fabric. I do not propose to review these problems, but I point out that good law for natural resource development is of the greatest importance.

Sustainable development has very properly become the general framework within which issues of natural resources development can be considered. While I will return to it in the context of environmental management, it is convenient to note now that it can be understood as the integration of economic, social and environmental development concerns. It can also be asked, what does sustainable development have to do with the development and
extraction of resources that are by their nature non-renewable – such as minerals? How can
an oil well be sustainable? To tell the truth, it can’t. Rather, it is the development of a society,
not an oil well, that can be sustainable. The underpinnings of society are rooted in the
biophysical world. But what can have a bearing on sustainable development are the rate at
which we use mineral resources (depletion rates), the care with which we put them to use
(energy efficiency and sustainability), and the care with which we treat other biophysical
assets (environmental management).

Let me make two further short points about sustainable development. First, sustainable
development is possible, but it is not easy. Sometimes corporations and government
departments write material that is excessively enthusiastic in declaring that they are doing
everything necessary to produce a sustainable future. Second, sustainable development
must necessarily be local; it is what happens country by country, in districts, river by river,
stream by stream.

**Natural Resource Development**

Let us turn to the laws on natural resources that we find in most countries, and the issues
that law makers will grapple with.

**Ownership**

There are numbers of different theories of ownership of natural resources:

- Accession theory: resource ownership is part of the ownership of the surface.
  Resource ownership is therefore a form of property law. This theory applies in the
  United States, parts of Canada, and South Africa until 2002. But it has not prevailed
  elsewhere.

- Domainal theory: ownership is vested in the state by virtue of general legal principles.
  This is much more common internationally.

- Regalian theory: natural resources are now subject of ownership, but access to them
  is controlled by the state.

- Accession theory modified by nationalization or by implied reservations in grants of
  land, producing ownership by state. South Africa has been an example since 2002.

- Offshore resources in the territorial sea: ownership is usually vested in the state as
  above.

- Offshore resources in the continental shelf: the state holds ‘sovereign rights’ under

Ownership under any such theory is subject to various complications. One of those is
federalism – in a federal state, is the resource owned by the federal or the state / provincial
government? Another is ownership of land; sometimes uncertainty or disputes about rights to
land can remain unresolved for years, but if valuable natural resources are discovered there,
then there is new pressure to resolve the question. Aboriginal title or customary title is a
 complication that can arise in such circumstances. Another complication comes from
boundary questions, on land and also (between nations) at sea. In relation to oil and gas,
there is the added difficulty that a reservoir that straddles a boundary can be drained by
development on one side to the detriment of the other. And development of a river may affect
other parties upstream and downstream.
Sequence of Development

The development of most energy resources (most particularly oil and gas and other minerals) goes through some or all of the following phases in a sequence:

- **Strategy**: a company decides what targets it seeks, and what region of the world it will investigate to find them.
- **Reconnaissance**: existing geological knowledge is surveyed, and new data is acquired eg by airborne geophysical methods.
- **Exploration**: particular geological features of interest are identified and evaluated. At some point drilling occurs to determine whether economic deposits of the target mineral are to be found.
- **Development**: the key decision is taken to develop the deposit. Finance is arranged, and production facilities are built. Infrastructure needs (roads, railways, gas pipelines) are built as necessary.
- **Production**: the project is completed and brought into operation. Its operating life may last many years.
- **Rehabilitation**: as land is no longer needed (eg for extracting coal) it is reclaimed and restored or rehabilitated. Such rehabilitation should be an integral part of the development and production process, and not left till last.

As resources development proceeds through this sequence, three different things happen. First, the amount of land affected decreases. Secondly, the intensity of the effect on the land concerned increases. Thus, environmental and social concerns change through the sequence. Thirdly, the amount of capital required grows during reconnaissance and exploration, and geological risk falls. However the fundamental decision whether to go into production requires the commitment of large amounts of capital. It is often an all-or-nothing matter; one cannot part-drill an oil well. At this point a company will feel vulnerable to changes in the legislative and regulatory environment – a matter we will discuss further below.

Disposition of Title to Natural Resources

Legislation must deal with natural resource development in a manner that is responsive to the characteristics of this sequence. The legal framework for the issue of rights to natural resources such as oil and gas or coal commonly includes the following features:

- **Ownership of the resource**: as discussed above.
- **Land open to mineral activity, or withdrawn**: eg, parks, areas of high social or cultural significance.
- **Allocation of rights**: more on this below. The different permits need to be suitable for the different stages in the sequence ie reconnaissance, exploration, development, production.
- **Nature of the rights**: term, conditions.
- **Work requirements**.
- **Right to go into production**: often as a right to exchange an exploration permit for a production permit. This raises questions of security of investment, as considered shortly below.
- **Title registration**.
- **Transfers**: including registration and whether (and on what terms) government approval is required.
- **Reporting of geological results**.
- **Revocation, compliance, and enforcement**.
- **Surface rights**: relationships with landowners, rights to use land, obligation to pay compensation.
- **Infrastructure**
- **Royalties, rentals, and taxes**.
Closure: abandonment, security, rehabilitation. These, then, are the elements that one looks for in any system for the disposition of natural resources.

There are different systems in use round the world for allocating rights to natural resources – that is, for the disposition of natural resources. We can list the major ones in a brief way.

- Free Entry: acquisition of title by staking a claim and asserting possession. Now obsolete for most purposes, especially for oil and gas and coal.
- Concessions: the classic concessions of the early twentieth century in the Middle East were very wide in their coverage, and very long in their term. They were disadvantageous to the host country. In more modern times Australia has used comparable franchise agreements that are subject to statutory ratification.
- Competitive bidding or mineral leasing: one of the most common systems, especially where a region is well explored. It often entails cash bonus bidding. In some cases (eg the British North Sea) discretionary forms of bidding systems have been used; the government decides the basis on which bids will be considered.
- Discretionary allocation system: provides a high degree of government flexibility but it can leave companies unsure what rules they need to follow in order to be successful.
- Production sharing agreements: now very common. They first appeared in use in the 1950s in Iran and Indonesia. The country grants a contractual right to explore and develop, the company recovers its costs and specified profits, usually in shares with a state oil company. Management clauses and work commitments are elaborate.
- Participation agreements: a joint venture is formed between the host country (or its state oil company) and a multinational company. OPEC countries have gradually moved from concessions to production sharing agreements and participation agreements.

State Development

While much of the foregoing implies development by a private company, often a multinational resources company domiciled outside the host country, many countries have established state-owned oil companies or minerals companies. Often they operate through production sharing agreements and participation agreements of the kind noted above. It is common for them to enter into petroleum service contracts, technical assistance contracts, risk service contracts, and technology transfer contracts with multinational companies. Through such means they can build up their own technical capacity. The existence of a state company may raise questions about industry structure, monopoly, and structural reform.

What is particularly important to note about state companies in this context that sometimes they will have a special position in legal terms; it may have special legal immunities and privileges by reason of being the state’s agent in resource development. That can have legal and environmental significance if it prevents ordinary land use and environmental law from applying to it. If environmental agencies cannot obtain remedies like injunctions or prosecutions, that presents something of a problem. At the very least it presents an inconsistency with other companies operating in the same sector, and with other resource sectors that do not possess such an entity in their structure.

Development and Operation

Resource development and operations often proceed under joint ventures and joint operating agreements, among commercial venturers or with the host state. Especially in the case of natural gas or of coal, the agreements will commonly involve infrastructure development as well as the resource extraction itself. Generally, long-term sales contracts will be needed to make sure that there is a stable income flow to pay off the loans that financed the project. The contracts need to deal with the risk of changes in the price of the commodity over the life...
of the contract. They need to deal with the risk that there will be no market for the commodity. So they are usually quite elaborate. This theme of risk and how to deal with it runs right through this field of law.

**Sovereignty and Security of Investment**

Indeed, the managing of risk is a key theme of natural resources law in respect of the tension between the sovereignty of a state and the need for a company to have security of investment. On the one hand are considerations of national sovereignty and freedom from economic colonialism. The United Nations Resolution on Permanent Sovereignty Over Natural Resources (UNGA Res. 1803, 1963), the Declaration on the Establishment of a New Economic Order (UNGA Res. 3201, 1974) and the United Nations Charter of Economic Rights and Duties of States (UNGA Res. 3281, 1975) all embodied these considerations. (It should be noted that the declarations need to be examined in the light of the general limitations on the rights of nations to expropriate foreign-owned property.) And on the other hand are considerations of the investment conditions that will be sufficiently reassuring to a company that it will be prepared to commit its capital and effort to an investment in a host country. If it is not sufficiently reassured, then a much-needed investment will not take place and energy needs, as well as general economic development, will not be met. The company is concerned, in the extreme case, that its investment in the host country will be expropriated or nationalized. Such expropriations certainly have occurred, in the Middle East and in Latin America in particular. The less extreme cases are also a major concern; for example, restrictions on: transfer or mortgage of titles, operation, procuring equipment, personnel, sale of products, currency transfer, and repatriation of capital and profits. In the Middle East, semi-compulsory renegotiations of concession terms have had similar effect. For the company, the great concern is the moment when it decides to go into production. It commits its capital, and then feels something of a hostage. It is worried that adverse action will leave it as owner of an expensive hole in the ground from which it cannot economically produce the resources it sought. Resources companies will say that they are used to managing many risks, including geological, engineering, and market risks; but that they are not able to manage governmental risk.

While attention is often focused on such risks in international transactions, they exist within countries as well. In such cases the debate is usually couched in terms of regulatory flexibility versus security of property rights from government intrusions.

Investment certainty and government flexibility are inevitably in tension. Governments want to attract investors, to create jobs, and to supply energy; but they do not want to lose the power to introduce new policies. The key is to find ways to manage risk, to manage change, and to provide suitable measures of flexibility and certainty. At root, of course, is the question of who gets the choice in determining when there will be change, or in determining how changing circumstances are to be met. If, for example, the price of oil goes up dramatically, or if the price collapses, does the company get a windfall? Or does it get ruined? Similarly, what policy changes will be necessary to cope with a sudden security scare, or a natural disaster? Or what responses will be proper if a new environmental problem emerges?

There is a whole field of law concerning such matters. A great deal of effort has gone in over the years to enable countries and investors to find the right sort of balance and to resolve differences. And in fact international companies are quite used to these issues. They are usually sophisticated and capable of finding flexibility. Investment safeguards such as investment protection treaties and constitutional and legislative safeguards are helpful, although seldom sufficient by themselves. Other measures are usually necessary, such as investment protection agreements with the host government, joint ventures with good local partners, and measures to combat corruption and other forms of illegality.
Sovereignty and Security of Investment: the Environment

Let us take this question of sovereignty and investment security a little further, in the particular case of environmental management. Consider a natural resource development of some kind, or some economic activity like farming. It has been proceeding under environmental regulation that it is used to. But then consider the possibility that it must face the likelihood that the environmental regulation is going to change, and is going to become tougher. There could be various reasons why – changing environmental circumstances, new scientific information, or new community and government pressure to resolve a problem. In any event, it faces a new set of rules that are going to cost more money, and that could even put the activity out of business. Certainly it will be asked why shouldn’t companies, and businesses, and farmers, know what the rules are, and not face changes? The answer is that change is inevitable, and companies are having to respond to change all the time. Certainly environmental regulation should not be capricious, but it does have to change and evolve. Otherwise a country’s ability to improve its environmental management is very limited. Should a company be given a guarantee that environmental regulation will not be tightened during the life of a project? That may sound like asking a lot, but companies have asked and have been given such guarantees in the past. Again, the issue is one of managing risk, the risk of change. And again, the issue is not confined to relations between a host country and a multinational corporation. It is commonplace within any country you care to name.

Constraints on Legislation

Let us broaden our view somewhat, and consider the different factors that legislators may need to take into account in evaluating proposals for legislation in the energy area. There are a number of constraints that can be relevant. The nation’s constitution may impose constraints on national and state legislatures. So may international commitments in treaties and conventions. So may the interjurisdictional character of resources such as waterways. Less formal constraints, but very real ones, arise from other factors. In particular, nations have found that they are often in a form of regulatory competition, where the terms they offer international companies in respect of royalties and the like will be compared with those of other nations. Equally, a legislature is constrained in making efforts to attract natural resource development if the country simply lacks favourable geology. On the other hand, there is a record of industry unconcern for the legal form of its arrangements with a state if the geological conditions and the track record of political behaviour are such that the industry is reasonably sure that it can continue to make money.

Another constraint is the policy of international financial institutions. For some countries, the policy of these institutions has been a major external constraint. It is still there, but it is noteworthy that its nature is changing. The World Bank in particular went through a period of soul-searching about the worth of its involvement in financing natural resource development projects. In consequence of the Extractive Industries Review, the World Bank put in place in September 2004 a new set of principles that it intends to act on in its dealing with partner countries:

- strengthening governance and transparency
- ensuring that extractive industry benefits reach the poor
- mitigating environmental and social risks
- protecting the rights of people affected by extractive industry investments
- promoting renewable energy and efficiency to combat climate change
- improving organizational co-ordination
- ongoing learning and review.
Environmental and Social Impact Management

Sustainable development is the integration of economic, social, and environmental development concerns. Or, as explained by the Brundtland Commission, it is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. We have come a long way in our understanding of the concept since the 1980s when it first attained prominence. It is important to observe that it is a concept that is not very meaningful at the broad level. International law is full of bold statements about it, and national law the same. All these generalities are commendable. But the concept only begins to be significant when we bring it down to specifics in a particular region, or a particular river, so that it can work for us. And indeed if it is a useful concept then it should work for us. It is therefore in the translating of the general concept into specifics that it becomes useful. A great deal of environmental law and environmental management is about that effort to translate the generalities in a systematic way into good results.

Environmental Management of Energy Resources Projects

Let's think for a minute about the particular characteristics of energy resources projects; oil fields, coal mines, hydro dams, wind farms, and the like. They have or they can have a high impact on the environment; although as we noted the area concerned may not be all that large. Oil and gas and mining occupy little land compared to other resource uses like forestry or agriculture. But they have a high impact on the land that is used. They are long term; they will generally be there for decades, not years. They involve a lot of money. And this is good news and it is bad news.

The good news is that in a high-capital project there is a lot of money available to take care of environmental problems properly; you get good mitigation. It is a small percentage of the overall cost, and if the company is committed to doing it right then it can take care. The bad news is that there is a lot of pressure – a lot of pressure to get the project built. It may not just be the financial side; the project may be seen as one essential for bringing power to the people of the country, or it may get tied up with national identity, or the enthusiasm of political leaders for mega-projects. This causes problems of institutional design; how do we set up the environmental management, the environmental laws, to be effective – so that they don’t get thrown out or watered down?

It is a challenge for law makers to design a system of environmental law that will be strong enough to withstand the pressure that comes with big energy projects, and delivers sustainable management. The hard question, the ‘deal-breaker,’ is when a project is put forward that will have such a large impact on the environment that it simply should not proceed. It is rare for such projects to arise; it is usually possible to manage and control many kinds of adverse effects on the environment. But not always; and that is when the politics and institutional design become difficult; do the environmental regulators have the ability to say no?

Good Law for Environmental Management

Turning to environmental and social issues, and focusing primarily on environmental law, one can identify characteristics that one can look for in good quality environmental management law. (It is desirable to speak of environmental management, rather than environmental law, because the law is only one part of the mix, and one hopes a minor one; it provides the framework within which community decisions are made.)

- Strategic: it must be forward looking and comprehensive. This involves planning in order to provide a context within which decisions are taken about individual proposals.
Integrated: it must take into account all aspects of the environment (water, air, wildlife, etc), even if different aspects are handled at different times or by different agencies.

Well-informed: it needs a good knowledge base. Scientific studies and traditional knowledge are both likely to have a place.

Community-based: it is local and participatory. Decision-making is not all centralized; it includes regional and local elements.

Effective; it must be adequately funded and enforced. Resourcing is always an issue. Enforcement must be available if necessary, but often the suitable response is education, guidance, or offering seed money.

Adaptive: it must change as necessary. Environmental regulation is a continuing game. Knowledge changes, funding changes, and so do community expectations.

Integration of Environmental Management and Energy Projects

Should environmental assessment and management be part of the natural resource development legislation? The issue is important with respect to natural resource development, and is a significant choice for legislators in deciding how to improve their legal framework. Different views can reasonably be held, so long as the consequences are understood.

If environmental assessment and management is to be part of the natural resource development legislation, then (for example) the legislation for oil and gas will include a part that deals with the environmental aspects of oil and gas development. There is a special code for oil and gas environmental management. A positive feature is that the grant of an oil and gas permit will be linked to environmental concerns. On the other hand, there will be less integration with other environmental management legislation. That may lead to an allegation that there is easier treatment for oil and gas than for other developments. If a gas pipeline and a water pipeline involve similar effects, why should they be treated differently? Similarly, if a mine has similar effects to a quarry, should its environmental effects be regulated under quite different legislation?

The other view is that environmental assessment and management should not be part of a country’s natural resource development legislation. Then the resources legislation (such as the oil and gas legislation) will be silent on environmental matters. The country’s general environmental legislation applies to all projects, whether oil and gas or anything else. The consequence must be that the grant of an oil and gas permit is neutral on environmental concerns. There is a higher degree of integration in the environmental legislation, because there is no special code for a different kind of development. On the other hand there is the risk that environmental concerns, and environmental managers, will come under pressure once an oil and gas permit issued. What expectations are raised by the grant of such permits?

The Role of Legislation

At this stage, let us pull together several broad themes about the role of legislation. More specifically, here are some matters for legislators to weigh up in considering proposals for changes to natural resources and environmental laws in their country. Generality is the first such matter. It is generally desirable that laws are of general application, and are not different for different classes of project or for each individual project. General framework legislation is often followed by decrees or regulation, in both natural resources law and in environmental law. Such arrangements of legislation are common, and perfectly workable, but they raise questions about the role of the legislator in relation to the official who makes the detailed regulations, and about the speed with which legislation at different levels can be amended.
The second broad theme is jurisdiction and procedure. Legislation confers jurisdiction or authority on named officials; it allocates power to make decisions on different issues. Depending on the issue, the right level for it may be federal, state, regional, or local. The officials exercising such power work within an institutional framework, and we have noted at several points how important a role is played by the design of institutions. Likewise, we have noted the importance of the integration of different bodies of law, and of the establishment of clear relationships between them. Procedure of course is important, especially where its role is to provide for public participation. Indeed, having a say in resource developments is a basic democratic right.

The third broad theme that one can identify is the balance between certainty and flexibility. We have considered the central problem of sovereignty in tension with security of investment, and the many ways that have been developed to deal with it. In fact, legislation of all kinds needs to find a suitable balance between clear rules and discretion; between firm statutory requirements and administrative (bureaucratic) flexibility for individual cases.

Such broad themes lead us to questions such as simplicity, both in procedure and in substantive rules or norms (on what matters is it really necessary to lay down a rule?) and good governance – what kinds of legislation will promote good governance and the rule of law? Enforcement, for example, requires a range of responses for different degrees of culpability, not only forfeiture and prosecution. Accountability measures for audit and review can be built in to legislative and institutional requirements.

Our thinking about natural resources and the environment is evolving. It involves the boundary areas between state and law and economy. Energy and resources are a classic case where both play a role, for example in the relations between governments and large corporations; neither can sensibly be excluded. Market reform and sustainability are not incompatible. Developer companies are hearing that, and say that they can live with it. They can manage those risks. But sustainability requires substantial effort, and general statements of support for it do not necessarily translate into good experience on the ground. Every country has its internal political pressures that can lead to adverse outcomes for people affected and for the environment. So good laws are essential, in order to make sure that environmental and social elements are firmly in place as part of the processes of energy resource development.

References


