

MAINSTREAMING SUSTAINABILITY: AN EVALUATION OF ALBERTA'S LEGAL AND REGULATORY REGIME FOR GAS DEVELOPMENT

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Introduction

Alberta's gas development and regulatory system has largely been held up as a gold standard to which other gas developing jurisdictions should aspire. The World Bank in 2004 endorsed Alberta's gas flaring reduction regulatory regime and recommended it as a standard to be emulated, and as the benchmark for evaluating other jurisdictions.¹ This article in light of this endorsement, considers the sustainability of Alberta's gas development regime. Sustainability is conceived not just in the general sense of a balance between development, the environment, human and social factors, but includes the optimal and efficient use of natural resources. This article examines how the theoretical concepts of sustainable development can be translated from academic concepts and mainstreamed into legislation and decision-making to make these sustainable. It does this by identifying core concepts of sustainable development, and using them as evaluative criteria to examine the legal and regulatory framework that governs Alberta's gas development. The aim is to assess present and long-term sustainability.

Sustainable Development of Gas in Alberta

Sustainable development as a concept has been widely defined, discussed and criticized for its

lack of definitional consensus, purely theoretical approach and absence of practical application or utility.² Despite the definitional challenge, there is considerable agreement on its basic principles and objectives. For example, both the *Brundtland Report*³ and the preamble of the *New Delhi Declaration of Principles of International Law Relating to Sustainable Development (New Delhi Declaration)* state that the objective of sustainable development is the sustainable use of natural resources and the protection of the environment with regard for the interests and needs of future generations, through a comprehensive and integrated approach to economic, social and political processes.⁴ A review of other definitions leads to the conclusion that the objectives of sustainable development involve limiting human activities and use of natural resources with a view to the needs of future generations. In the case of non-renewable resources, the objective is optimizing their efficient use.⁵ For governance and regulation, it entails "a governance structure that integrates environmental and economic concerns into all decisions" and promotes sustainable consumption levels, intergenerational equity and public participation.⁶ For the purposes of this article, conservation is included as one of the objectives of sustainable development since it relates to gas development.⁷ This is because conservation is the foundational idea from which the modern ideas





of sustainable development evolved. Today it can be expressed as a fundamental part of sustainable development.⁸ Conservation refers to the efficient use and development of natural resources in a manner that is environmentally appropriate, eliminates or prevents waste, and protects the interests of future generations.⁹ It is against the backdrop of these objectives of sustainable development that this article evaluates Alberta's gas development regime. This evaluation shows how sustainable development can be translated from theory and integrated into practical decision and law making in the development of natural gas.¹⁰

The application of the concept of sustainable development to oil and gas resources in Canada and Alberta is not a novel idea but one that in essence dates back to the early 1900s.¹¹ For many years following the discovery of gas, Alberta flared and vented much of its natural gas.¹² This flaring led to waste of a valuable resource and resulted in the exhaustion of gas caps of oil pools leaving vast amounts of oil unrecoverable.¹³ Additionally, concerns about the potential effects of flaring and its resultant emissions on humans and the environment, the odor, noise, smoke, unpleasantness of flickering flames as well as questions about the combustion efficiency of flaring, necessitated the adoption of an effective sustainable approach. In Alberta's case, the tool was conservation.¹⁴ The foregoing concerns, as well as the growing understanding of the relationship between associated gas production and its detrimental effects on oil production led to the adoption of conservation measures and the establishment of the Petroleum and Natural Gas Conservation Board (PNGCB) in 1938 to oversee these measures.¹⁵ The mandate of the PNGCB was to address the wasteful exploitation of oil and gas resources and devise a formula for their equitable sharing.¹⁶ Today this body, formerly the Energy Resources Conservation Board (ERCB), and now the Alberta Energy Regulator (AER), is responsible for administering a comprehensive regulatory system, based largely on sustainability principles.¹⁷ Oil and gas development in Alberta is regulated by the *Mines and Minerals Act* (MMA),¹⁸ the *Responsible Energy Development Act* (REDA)¹⁹ which sets up the AER, the regulatory body at the centre of Alberta's resource development regime,²⁰ the *Oil and Gas Conservation Act* (OGCA),²¹ the *Gas Resources Preservation Act* (GPRA),²² the *Environmental Protection and Enhancement Act* (EPEA)²³ and the *Climate Change and Emissions Management Act* (CCEMA).²⁴

The demonstration of the mainstreaming of sustainability into laws and regulations for gas development in this section will be based on examining the regulatory regime established by the statutes highlighted above,²⁵ the attendant regulations, and the regulatory directives issued by the AER, and evaluating them against identified criteria. These identified criteria, which will be considered in more detail below, include the integration of sustainable elements into decision and law making, protection of the environment, optimizing efficient use of resources, sustainable use of natural resources, integration of environmental concerns into development projects, conservation, public interest, public participation, and intergenerational equity.

Integration of Sustainability Elements into Decision and Law Making

Law making is at the root of every regulatory system. It can take the form of either primary or secondary legal instruments. Both forms, if properly utilized, contribute to the certainty and flexibility that are essential to a sustainable system.²⁶ Primary legislation gives regulatory institutions legal powers to carry out general natural resource management functions and environmental policies. Secondary legal instruments provide for detailed regulatory measures, which create flexibility and adaptability in responding to the changing conditions of natural resource production and management.²⁷ Alberta's gas regulatory regime adopts a mix of both, with the OGCA²⁸ and the REDA,²⁹ being the primary legislation at the core of Alberta's regime. There is also secondary legislation such as regulations and detailed directives issued and enforced by the AER.

The regulating statutes promote development, incorporate the prevention of waste, control pollution, protect the environment and preserve the interest of future generations. A review of Alberta's primary legislation shows that the primary mandate of the AER under the REDA is to provide efficient, safe, orderly and environmentally responsible development of energy resources through its regulatory activities. Its specific mandate as it relates to gas development includes the protection of the environment, as well as monitoring and enforcing safe and efficient practices in the exploration for and the recovery, storing, processing and transporting of energy resources, in this case,



natural gas.³⁰ It is noteworthy that under the now repealed *Energy Resources Conservation Act* (ERCA), the mandate concerning gas development was more expressly spelled out. The ERCA's primary objectives included conservation and prevention of waste of energy resources,³¹ control of pollution, ensuring the protection of the environment and securing the observance of safe and efficient practices in the exploration and development of energy resources.³² The OGCA on the other hand, specifically regulates the conservation of oil and gas.³³ It was enacted primarily to achieve conservation, prevent the waste of Alberta's oil and gas, secure the observance of safe and efficient practices in oil and gas operations, provide for economic, orderly and efficient development of oil and gas resources, and control resultant pollution.³⁴

Protection of the Environment

In addition to the mandate of the AER to protect the environment in sections 2(1) to 2(6) of the REDA, two statutes address the environmental aspects of Alberta's conservation regime. These include the CCEMA, which was enacted to protect Alberta's environment and to manage the exploration, development and production of renewable and non-renewable resources.³⁵ In other words, it can be said that it was enacted to ensure the sustainable development of Alberta's renewable and non-renewable resources. The tools employed in protecting the environment include the imposition of specified gas emission targets, the use of emission offsets to achieve reductions, and the establishment of a Climate Change and Emissions Management Fund.³⁶ These measures have had a direct impact on gas flaring, including prevention of waste and protection of the environment. The EPEA on the other hand, was enacted to support more broadly and promote the protection, enhancement and wise use of the environment.³⁷

Alberta's oil and gas regulators work collaboratively with the Ministry of the Environment and the Clean Air Strategic Alliance (CASA) in achieving environmental protection objectives.³⁸ Under the OGCA, the AER is required to consult the Minister of Environment and to obtain approval when making rules on a variety of operational issues.³⁹ The AER also must obtain the approval of the Minister of the Environment to approve a scheme for the storage or disposal of any fluid or substances to an underground formation, such as a carbon storage scheme.⁴⁰

Optimal and Efficient Use of Resources

The promotion of production efficiency and optimal use is one of the hallmarks of a sustainable gas development regime.⁴¹ In Alberta, one of the factors that determines the conservation of solution gas is whether its recovery is economic.⁴² The economic evaluation of gas conservation involves first and foremost using an economic decision tree process. This process requires operators to evaluate the economic feasibility of conserving gas and enables them to identify situations where it is possible to conserve.⁴³ The economic evaluation criteria to be considered in determining the most economically feasible option are provided for in *Directive 060*.⁴⁴ Rather than adopting a typical corporate "hurdle rate",⁴⁵ the economic criteria are based on a "break-even premise"⁴⁶ that allows the recovery of the cost of financing. The economic feasibility of conserving gas translates to conservation in many gas projects, which might otherwise have been unattractive projects.⁴⁷ The options that are evaluated include the possibility of delivering gas to the market, using it on site for fuel, or using it to generate electricity. If any of these scenarios provide a marginally economic way to conserve the gas rather than flare, the operator will be required to conserve the gas.⁴⁸

The benchmark for conservation in Alberta is Net Present Value (NPV).⁴⁹ A conservation project is considered economic and gas must be conserved if a project generates a before tax NPV greater than \$50,000.⁵⁰ Where it is determined that gas conservation may not be economic on its initial evaluation (such as a project that has an NPV-less than \$50,000), the project economics must be re-evaluated within 12 months using updated prices, costs and forecasts.⁵¹ When the volume of gas being flared from a pool or group of pools becomes significant or the value of the gas increases significantly, an economic feasibility assessment of gas conservation will be made by the AER or the producer. If the AER considers gas conservation to be feasible, it encourages the producer to undertake a suitable conservation program voluntarily.⁵² To ensure that gas is conserved where economically feasible, the AER may also issue gas conservation orders.⁵³ The evaluation of economic efficiency has been a major factor in improving conservation of associated gas in Alberta.⁵⁴

The efficient use of resources entails the prevention of waste. Prevention of waste is one of the foundational pillars of conservation and, by extension, a sustainable





regime.⁵⁵ A sustainable gas development regime should sufficiently define and prohibit waste.⁵⁶ The gas development regime in Alberta addresses the prevention of physical waste from gas flaring, economic waste arising from loss of revenue and stranded oil as well as market waste resulting from over-production.⁵⁷ Even though efficient development of energy resources is one of the main objectives of the REDA, it is noteworthy that it does not provide a definition or even mention “waste”.⁵⁸ The OGCA however provides an extensive and detailed definition of waste and wasteful operations.⁵⁹ Wasteful operations in oil and gas generally include activities that reduce the quantity of oil or gas ultimately recoverable from a pool under sound engineering and economic principles, cause excessive surface loss or destruction of oil or gas, involve inefficient, excessive, improper use or dissipation of reservoir energy, or fail to use suitable enhanced recovery operations in a pool.⁶⁰ In particular, wasteful operations in gas development include the escape or the flaring of gas, particularly if, “it is estimated that, in the public interest and under sound engineering principles and in the light of economics and the risk factor involved, the gas could be gathered, processed if necessary, and marketed, stored for future marketing, or beneficially injected into an underground reservoir.”⁶¹ It also extends to the inefficient surface or underground storage of gas, or the production of gas in excess of proper storage facilities, transportation, marketing facilities or market demand for it.⁶² The limit placed on maximum daily and annual quantities of gas to be removed under the GPRA is also connected to the need to prevent waste.⁶³

Integration of Environmental Concerns into Development Projects

A central pillar of sustainable development is the integration of environmental concerns into economic development, and in this instance, the consideration of the environmental impact of gas development activities.⁶⁴ This aspect is very closely linked with the protection of the environment. In Alberta, the EPEA was enacted to support and promote the protection, enhancement and wise use of the environment. It was promulgated in recognition of the importance of environmental protection, the need to balance economic growth and prosperity with the environment, the principle of sustainable development in terms of preserving resources for future generations, and mitigating the

environmental impact of development and government policies.⁶⁵ One of the tools used by the EPEA is an environmental impact assessment (EIA) process whose goals include supporting environmental protection and sustainable development, integrating environmental protection and economic decisions into the earliest stages of project planning, predicting the environmental, social, economic and cultural consequences of a proposed activity, assessing plans to mitigate any resultant adverse impacts, and providing for public, proponent, and government participation in the review of proposed activities.⁶⁶ An EIA is required where the potential environmental impacts of a proposed activity may warrant further consideration.⁶⁷ In such a case, the Director of the EIA process is required to give the proponent of the project written notice advising that the proposed activity must be evaluated by the EIA processes stipulated under the EPEA.⁶⁸

The CCMEA on the other hand, was enacted in acknowledgement of the government’s commitment to protect Alberta’s environment for future generations.⁶⁹ Its other objectives include management of the exploration, development and production of renewable and non-renewable resources. This Act aims to develop environmentally-sustainable technologies that maximize the value of natural resources and the protection of the environment by the management of emissions of carbon dioxide, methane and other specified gases. All of this shows that Alberta’s gas development regulatory regime integrates the protection and wise use of the environment, and the development of sustainable technologies.

Conservation Measures

To be sustainable, a regime or statute for the development of gas should have conservation at its foundation and provide detailed gas conservation measures and practices.⁷⁰ Alberta’s gas development regime has long incorporated specific conservation measures.⁷¹ Today the conservation measures to be undertaken in the production of oil and gas are specifically set out in the OGCA.⁷² In furtherance of preventing waste and achieving conservation, the AER has the power to require enhanced operations in any pool and more specifically as it applies to gas, require that produced gas be gathered, processed, marketed or injected into an underground reservoir for storage or for any other purpose.⁷³ Other methods of conservation include pipeline sales, utilization as fuel or for power generation and pressure maintenance.⁷⁴





Joint development or unitization is another conservation measure employed in Alberta's gas development regime. It allows for the pooling of resources and expertise to develop resources where that will make better economic sense and promote optimal output amongst other things. Unitization occurs when tract owners either voluntarily choose to or are forced to combine their tracts and interests. It is normally for the purpose of engaging in joint enhanced recovery operations.⁷⁵ With unit operations, a reservoir can be exploited as one unit, avoiding duplication of efforts, eliminating fears of adverse drainage, and sharing costs of conservation programmes.⁷⁶ A sustainable and effective gas regulation statute must emphasize and encourage development of the resource pool rather than individual tracts or leases where necessary.⁷⁷

Under the Alberta regulatory regime, where more efficient and economical development and production of the oil and gas resources of the pool will be accomplished by unit operation, cooperative development or joint participation, the AER will encourage efforts initiated by owners to consolidate, merge or combine their interests.⁷⁸ Similarly, the owner of a tract within a drilling spacing unit may apply to the AER for an order that allows all tracts within the drilling spacing unit to be operated as a unit for drilling or production of oil or gas.⁷⁹ The granting of the order means, the drilling, production and all incidental operations for the unit are deemed to be carried on by the owners respectively on their separately owned tracts in the unit.⁸⁰ The costs and expenses of the unit operation are shared and borne by the owners in the same proportion that they will have borne prior to the unit operations.⁸¹ Another aspect of unit operations in Alberta is clustering. Clustering is the practice of gathering the solution gas from several flares or vents at a common point for conservation.⁸² It is sometimes economic to conserve solution gas if operators coordinate their efforts to take advantage of the combined gas volumes and economies of scale.⁸³ This is because gas economics are enhanced if conservation is incorporated into the initial planning of larger projects. Operators of production facilities within a stipulated distance from each other are required to jointly consider clustering when evaluating their gas conservation economics.⁸⁴

Public Interest

A regulatory authority may be created for the purposes of enforcing conservation regulation, or it may be taken up as part of an existing authority's portfolio.⁸⁵ One of the objectives of sustainable development is

the consideration of public interest. An expression of this necessitates that the institutions that regulate gas development activities should be independent from the companies or operators they regulate.⁸⁶ According to the Supreme Court of Canada in *R. v. Valente*, the test for independence and impartiality is whether the regulatory body may be reasonably perceived as independent.⁸⁷ It further held that impartiality refers to a state of mind or attitude, while independence connotes a relationship to others, particularly to the executive, which is based on objective conditions and guarantees.⁸⁸ Also, in *Ocean Port v. British Columbia (General Manager, Liquor Control and Licensing Branch)*,⁸⁹ the court held that it is the enabling statute that determines the degree of independence required of any regulatory agency.⁹⁰ This means that the enabling statute must clearly define the responsibilities and powers of the regulator, and the regulator should in its decisions be independent from the executive, and operate under transparent and enforceable processes.⁹¹ The regulator should also be able to enforce compliance and there should be no overlap in the responsibilities of regulating agencies.⁹² In addition, Hempling argues that an effective regulator is characterized by three attributes namely: defining its purpose, making proactive decisions in the public interest and freedom from forces that reduce accountability and attack the purpose of the regulation.⁹³

The AER is the regulatory body set up under the REDA, which clearly sets out its mandate, composition and powers.⁹⁴ The AER combines the functions of the former ERCB and Alberta Environment and Sustainable Resource Development (ESRD) to create a single, integrated regulator with oversight over upstream oil, gas, oil sands and coal development.⁹⁵ This can be seen as a step towards improving efficiency by eliminating unnecessary overlap and duplication in the function of the regulator. Under the REDA, the AER is responsible for carrying out government policy, but unlike its predecessor the ERCB, the development of policy has been moved to the government.⁹⁶ According to Harrison, Olthafer and Slipp, this division marks a "substantive shift from the mandate of the ERCB", which included setting and carrying out policy for energy development at arm's length from the government. In their opinion, this raises questions as to whether the AER can be said to truly be an independent agency.⁹⁷ Under section 67 of the REDA, the Minister may by order, give directions to the AER by setting priorities and guidelines for it to follow in discharging its powers, duties and functions. This extends to ensuring that the work of the AER is





consistent with the programs, policies and actions of the Government in respect of energy resource development and environmental management.

In addition to this oversight in policy making, the Minister may direct the hearing commissioners under section 15 of REDA to consider certain factors in reaching a decision on an application, regulatory appeal, reconsideration or inquiry brought before them.⁹⁸ Harrison, Olthafer and Slipp also argue that the provisions for review under the REDA do not provide an interested party with the ability to seek review of government policy direction to the AER, or the rules and regulations the government puts in place to guide the regulator's decision-making. In their opinion, this raises the suggestion that it is the provincial government and not the AER that has the final say over energy resource decisions.⁹⁹ It has also been argued that even though these changes, which are thought to be in line with current Federal policy on resource development, may on one hand be seen as improvements to the efficiency of the process by streamlining regulators, and encouraging investment, a broad view highlights a trend towards limiting the role of the regulator in review and decision making, in order to align regulatory decisions with broader government policy.¹⁰⁰ This marks a shift from the substantial independence enjoyed by the regulator under the ERCA, and its overall appearance of emphasizing conservation and sustainability, toward a development facilitation role.

It is noteworthy that the REDA does not mention or define public interest, unlike its predecessor the ERCA, which expressly stipulates its consideration of public interest when conducting hearings, inquiries or other investigation with respect to energy resources.¹⁰¹ In discussing the use of this term with respect to the repealed ERCA, Passelac-Ross & Zelmer argue that the term "public interest" is not defined in the ERCA, and there is no uniformly accepted definition for the term. As such, public interest can be defined in many ways including, economic terms if the goals of regulation are economic growth, wealth maximization and resource efficiency; or common interests that everyone shares, such as clean air and safe water.¹⁰²

Even though it did not include an express definition, the ERCA provided that in its consideration of the public interest, the board would have regard for the social, economic and environmental effects of a project.¹⁰³ This

aspect is noticeably absent from the REDA. A definition of public interest is important because the "public interest" plays a vital role in determining and setting the direction for natural resource regulation and development decisions.¹⁰⁴ The GPRA on the other hand incorporates public interest into its mandate. It sets out the terms and conditions for granting permits to remove natural gas from Alberta based on this. For example, a permit under the GPRA will not be granted unless it is in the interest of the public to do so. Public interest includes the present and future needs of Albertans, established reserves and growth in natural gas discovery.¹⁰⁵

Public Participation

One of the central tenets of sustainable development is the consideration of the needs and interests of present as well as future generations. This finds expression in part in the idea of participation by persons who are directly affected and also by those who have an interest in the work of the conservation authorities.¹⁰⁶ Alberta's gas development regime incorporates public participation into its regulatory model. For instance, under the repealed ERCA, the ERCB was required to give consideration to public interest, taking into account, the social and economic effects of the project in general, as well as the effect of the project on the environment.¹⁰⁷

There are also consultation and notification requirements in Alberta's conservation regime.¹⁰⁸ Operators with continuous gas flares, incinerators or vents must consult with or notify the public of activities related to the flaring, incinerating or venting of gas at their facilities.¹⁰⁹ The information to be included in the public notification process is expressly spelled out.¹¹⁰ Applicants are required to consult with new and existing residents prior to licensing if the proposed site may flare or vent natural gas.¹¹¹ Operators must consult annually with, and address the concerns of residents living within a prescribed distance from a solution gas flare.¹¹² They are also required to notify crown disposition holders, local authorities, landowners, occupants and urban authorities whose interests are located within 1.5 km of the operations site.¹¹³ Sections 9(1) and (2) of the *Alberta Energy Regulator Rules of Practice* (Rules of Practice) stipulate the form and content of the request to participate in an application or hearing. There are limitations on the right to participate. Reasons for which participation will be denied include failure to prove that a potential participant is directly and adversely affected, the participation will not materially assist in deciding the



subject matter and lack of a tangible interest in the subject matter of the hearing.¹¹⁴

Also, in consideration of the significant costs of intervention for private citizens when compared to financial capacity of the companies proposing projects, there are mechanisms in Alberta's regulatory system to assist possible intervenors with the cost of hearings.¹¹⁵ Unlike the repealed ERCA, which expressly defines who intervenors are,¹¹⁶ and clearly states the criteria for determining whether or not costs will be awarded, and the amount to be paid,¹¹⁷ the REDA does not clearly spell out cost award criteria. Section 61 of the REDA gives the AER broad powers to make rules including rules governing costs in respect of hearing applications, regulatory appeals and reconsiderations.¹¹⁸ Under this authority, section 64 of the Rules of Practice gives the regulator the power to award costs in appropriate circumstances taking the factors it sets out in section 58 into account. It is under section 58 that we find the closest reference to intervention costs. Section 58 provides a definition of participants who are entitled to costs that includes persons, groups or associations that have been permitted to participate in a hearing. It excludes persons, groups or associations that are in the business of trading in, or transportation or recovery of any energy resource.¹¹⁹ Under section 58 in deciding whether to award costs, the regulator is to consider the shared responsibility of all Alberta citizens to ensure the protection, enhancement and wise use of the environment through individual actions as well as whether the participant required financial resources to make an adequate submission. Whether the submission of the participant made a substantial contribution to the binding resolution meeting, hearing or regulatory appeal will also be taken into account.¹²⁰

In spite of the existence of these opportunities for public participation, it has been noted that the standing and intervenor costs criteria often act as barriers to public participation in Alberta. For example, the language of the REDA refers to persons who are "directly and adversely affected" by an application as those who are entitled to be heard on an application.¹²¹ It has been argued that this language is used to limit the scope of persons who are able to trigger hearings, and object to projects.¹²² Harrison, Olthafer and Slipp argue that the factors to be considered in hearing an application, appeal or reconsideration as prescribed in section 3 of the *Responsible Energy Development Act General*

Regulations (the General Regulations),¹²³ may also limit standing in an application before the AER. This section requires the AER to take into consideration the social and economic effects of the activity, the effects of the resource activity on the environment, and in addition, impacts on a landowner.¹²⁴ This means that for most oil and gas projects, only resident landowners within a pre-determined "consultation radius" of 500 metres as provided in *Directive 056* have standing.¹²⁵ Furthermore, even though a person is determined to have standing, it is ultimately within the AER's discretion to determine whether or not to have a hearing.¹²⁶

Along with standing, the cost of bringing an action is also a significant barrier.¹²⁷ This barrier lies in the use of the directly affected person test and the discretionary nature of the award of costs.¹²⁸ The discretionary nature of the payments arises from the fact that the language of the Rules of Practice does not mandate the payment of intervenors' costs. The award is discretionary. The AER may award costs in circumstances where it considers it appropriate.¹²⁹ Further, the EIA process under the EPEA includes facilitating the involvement of the public, proponents and the Government in the review of proposed projects.¹³⁰ However it has been posited that even though the EIA provides an effective means of public participation in government decision-making, the legislated mechanisms for public participation at the EIA stage in Alberta are limited.¹³¹ This is because public participation in the EIA process is only available to persons who are directly affected by a proposed activity, who are then required to submit written statements of concern to the responsible Director for consideration in the decision-making process.¹³² It effectively excludes interested parties who cannot show that they are directly affected.

Intergenerational Equity

In addition to the criteria discussed above, a sustainable regime should provide a means of translating present revenue into long-term benefits for both present and future generations. This is especially important in the context of non-renewable resources, which are subject to depletion.¹³³ Sustainability can be achieved by means of a fund, into which some of the revenue derived from resource exploitation are deposited for future use.¹³⁴ In Alberta, the CCMEA makes provision for a climate change emission fund to be used for purposes related to the reduction of emissions of specified gases and improving Alberta's ability to adapt to climate change. This





is geared towards protecting and preserving Alberta's environment.¹³⁵ In the same vein, the EPEA establishes an Environmental Protection and Enhancement Fund.¹³⁶ There is also the *Alberta Heritage Savings Trust Fund Act*,¹³⁷ which sets up a Heritage Savings Trust Fund (the Fund). The objective of this Fund is ensuring prudent stewardship of savings from Alberta's non-renewable resources for future generations. It does this by dedicating the financial returns on those savings for the benefit of Alberta's current and future generations.¹³⁸ Contributions to the Fund are primarily derived from a percentage of the Government revenue in each fiscal year under various agreements for the development and sale of non-renewable resources, as well as revenue from royalty and payments made with respect to non-renewable resources.¹³⁹

Other Foundational Elements of a Sustainable Regime

In the absence of monitoring to evaluate compliance, a regulatory system cannot be sustainable. Alberta's conservation regime has solution gas reporting requirements that aid monitoring of compliance with conservation measures. The volumes of solution gas flared, incinerated and vented by operators must be reported monthly through the Petroleum Registry of Alberta.¹⁴⁰ This monitoring is important because public disclosure, and the need to project, and maintain a "green or environmental" image exerts positive pressure on operators to comply with conservation measures. It also serves as a commendation and positive re-enforcement because it provides recognition for compliant operators. The data obtained also indicate where the largest amount of flaring and venting occur, and help to focus regulatory efforts to achieve reductions.¹⁴¹ For several years the AER has published a comprehensive annual compliance report for all its compliance categories.¹⁴²

A sustainable regime will also not be effective without enforcement powers to address non-compliance. In facilitating effective and efficient compliance, Alberta uses a compliance assurance system set out under *AER Directive 019: Compliance Assurance*.¹⁴³ This system utilizes education, prevention and enforcement as tools.¹⁴⁴ Alberta also employs a method of graduated compliance, as well as interim gas flaring reduction targets, in phasing out gas flaring.¹⁴⁵ For example, the AER's enforcement process begins with warning letters, notifications of non-compliance and meetings, before

escalating to harsher sanctions such as production cuts or shut-ins.¹⁴⁶ Compliance infractions are also publicly reported as the AER summarizes and publishes all enforcement actions.¹⁴⁷ To enforce its orders, the AER may enter, seize, control and manage a well or facility or discontinue production.¹⁴⁸

The OGCA specifically prohibits the commission of waste and wasteful operations.¹⁴⁹ Both corporations and individuals can incur liability for offences under the OGCA.¹⁵⁰ The OGCA also empowers the AER to cancel or suspend a license or approval for a definite or indefinite period where there has been a contravention or failure to comply with the OGCA, its regulations or an order of the AER.¹⁵¹ The AER may also hold an inquiry, or order a well or facility to be shut down or closed under the same circumstances.¹⁵² Licensees are also encouraged to actively monitor their compliance with AER requirements through tools such as self-inspections and self-audits.¹⁵³ Finally, the AER may refer a matter for prosecution where a licensee has acted with demonstrated disregard.¹⁵⁴ An operator may also be prosecuted for the commission of waste, or contravention of the provisions of the OGCA, its regulations and directives.¹⁵⁵

Conclusion

Alberta's well-developed and effective regulatory processes have received international attention for its successes in natural gas flaring and venting reductions.¹⁵⁶ As compared to 1996 when significant volumes of gas were still being flared in spite of best efforts, between 2008 and 2012, Alberta's upstream oil and gas industry conserved nearly 96% of all solution gas for use and sale rather than flaring and venting it.¹⁵⁷ This review demonstrates that the legislation that governs Alberta's legal and regulatory regime aptly addresses the primary objectives of sustainability highlighted above. Stated objectives and regulatory tools are directed toward achieving conservation, preventing waste of energy resources,¹⁵⁸ protecting the environment, controlling pollution, ensuring environmental conservation,¹⁵⁹ and providing for economic, orderly and efficient development of oil and gas resources.¹⁶⁰ This sustainability-based examination of Alberta's gas development regime under the identified criteria, also shows that the system is not perfect. There are arguments that the new regime under REDA favours



more government control, and promotes development policies over sustainability.¹⁶¹ Overall, Alberta has a regime that is largely sustainable. At its foundation is an effective legal and regulatory framework.

In addition to regulatory initiatives, the Alberta Government has adopted novel approaches such as the decision tree and a consultative approach, which involves industry engagement and commitment. Alberta has also used novel policy approaches such as financial incentives for operators who conserve gas. This encourages productive use, rather than flaring of solution gas.¹⁶² As well as the decision tree and a consultative approach, which is aided by the efforts of industry and CASA stakeholders,¹⁶³ other contributory factors are the publication of the annual flaring and venting report,¹⁶⁴ monthly publication of solution gas flaring and venting data,¹⁶⁵ and foundationally the development and enforcement of the *Upstream Petroleum Flaring Incinerating and Venting Directive*.¹⁶⁶

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Notes

1. IT Odumosu, *Reforming Gas Flaring Laws in Nigeria: the Transferability of the Alberta Framework* (LLM Thesis, Faculty of Law, University of Calgary, 2005) [unpublished] 1 at 5. Alberta's introduction and adoption of novel approaches such as the concepts of voluntary challenges, the decision tree processes and economic feasibility evaluations, into its current regulatory regime, have gained international recognition and these concepts are now included in the World Bank's Global Gas Venting and Flaring Reduction Voluntary Standard. See The World Bank Group "Regulation of Associated Gas Flaring and Venting: A Global Overview and Lessons from International Experience" (1 April 2004) 1:3 Global Gas Flaring Reduction: A Public-Private Partnership Report [World Bank Report], online: The World Bank <http://www.wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2004/07/16/000012009_20040716133951/Rendered/PDF/295540Regulati1aring0no10301public1.pdf>. It is also noteworthy that for example, the guidelines, which prescribe environmental and emission standards in Nigeria, reference the Oil and Gas Regulations of the Alberta Energy Regulator. See *Environmental Guidelines and Standards for the Petroleum Industry in Nigeria* (Lagos: Dept of Petroleum Resources, 2002) 1 at 27.
2. Wilkins for example notes that even though the attempts to apply the concept of sustainable development span over 20 years, successful applications have been very rare. See H Wilkins, "The Integration of the Pillars of Sustainable Development: A Work in Progress" (2008) 4 McGill Int'l J Sust Dev L & Pol'y 163 at 185. Due to the sheer volume of discussions on definitional challenges and criticism of the concept of sustainable development, a detailed discussion will be outside the scope of this article. For detailed and extensive discussions on sustainable development, its evolution, principles and application to national and international laws, see M-C Cordonier Segger & A Khalfan, *Sustainable Development Law* (Oxford: Oxford University Press, 2004) 1; N Schrijver, *The Evolution of Sustainable Development Law: Inception, Meaning and Status* (Leiden: Martinus Nijhoff Publishers, 2008) 1 at 172; and HC Bugge & C Voigt, eds, *Sustainable Development in International and National Law* (Groningen: Europa Law Publishing, 2008) 3. For a fuller discussion on sustainable development and its practical application to gas development, see OK Onuma, *A Legal and Regulatory Perspective to Sustainable Gas Development* (Germany: Lambert Academic Publishing, 2012) 1.
3. United Nations World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987) 1 at 43.
4. Schrijver, *ibid* at 172, citing the International Law Association (ILA), *Resolution 3/2002 in ILA Report of the Seventieth Conference, New Delhi* (London: ILA, 2007) [New Delhi Declaration], online: ILA <<http://www.ila-hq.org>>. See T Kuokkanen, *International Law and the Environment* (The Hague: Kluwer Law International, 2002) xxi at 333 citing *North-South: A Programme for Survival* (Report of the Independent Commission on International Development Issues, 1980) 40.
5. A Kiss, "Public Lectures on International Environmental Law" in AJ Bradbrook & RL Ottinger, eds, *Energy Law and Sustainable Development* (Cambridge: IUCN, 2003) 6 at 14; DW Pearce & KR Turner, *Economics of Natural Resources and the Environment* (Baltimore: John Hopkins University Press, 1990) 24.
6. DR Hodas, "Sustainable Development and the Marrakech Accords" in Bradbrook & Ottinger, *ibid* at 56. See also Eggert, where he notes in respect to mining, that making it sustainable requires paying attention to development; environmental protection; research to improve mining, mineral processing, and environmental management; as well as investment in activities, such as education and industrial research that will sustain a country or region after it has depleted its mineral deposits. See RG Eggert, "Sustainability and Resources Policy" (1995) 21:1 Res Pol'y 3 at 4.
7. MA Ayoade, *Disused Offshore Installations and Pipelines: Towards Sustainable Decommissioning* (The Hague: Kluwer Law International, 2002) 1 at 178. For the application of sustainable development to the petroleum industry, see SN Onuosa, "Sustainable Development of Petroleum Resources: the Rumpus and Resolution" in Z Gao, ed, *Environmental Regulation of Oil and Gas* (London: Kluwer Law International, 1998) 433 at 438. Gas development here





- sums up both exploration and production. Gas “exploration” refers to all the operations associated with finding natural gas and drilling discovery wells for its production, while gas “production” refers to operations involved in bringing gas to the surface after wells are drilled and completed in a field or producing area. See RG Baker & C Illig, “Natural Gas Supplies for Tomorrow” (1954) 19 Law & Contemp Probs 361 at 361-363.
8. It is articulated as a main component of the duty of states to ensure sustainable use of their natural resources under the *New Delhi Declaration of Principles of International Law Relating to Sustainable Development*. See *New Delhi Declaration*, *supra* note 4. For discussions on the evolution of idea of sustainable development from the ideas of sustained yield and sustainable use which translate to the modern day ideas of conservation and sustainable development, see M-C Cordonier Segger, “Sustainable Development in International Law” in Bugge & Voigt, *supra* note 2, 87 at 92; H Frey & P Yaneske, *Visions of Sustainability: Cities and Regions* (New York: Taylor & Francis, 2007) 1 at 3. The idea of sustainability was formally recognized in the *Brundtland Report* of the World Commission on Environment and Development in 1987, *supra* note 3.
 9. JS Lowe, *Oil and Gas Law*, 2d ed (St Paul: West Publishing, 1988) at 18-19; GW Govier, “Oil and Gas Conservation” (Paper presented at the Western Annual General Meeting of the Canadian Institute of Mining and Metallurgy, Vancouver, BC, 6-8 November 1950) [unpublished] 1 at 1-2; and DH Breen, *Alberta’s Petroleum Industry and Conservation Board* (Edmonton: University of Alberta Press, 1993) at xxix.
 10. As earlier highlighted, sustainable development as a concept has been widely criticized for its purely theoretical approach and ambiguity. See TW Walde, “Natural Resources and Sustainable Development: From Good Intentions to Good Consequences” in N Schrijver & F Weiss, eds, *International Law and Sustainable Development* (Leiden: Martinus Nijhoff Publishers, 2004) at 119; and JO Saunders, “Path to Sustainable Development: A Role for Law” in JO Saunders, ed, *The Legal Challenge of Sustainable Development* (Calgary: Carswell, 1990) at 1. Heyes and Liston-Heyes recognize the need to practicalize sustainable development when they say that, “we believe that the ‘sustainability debate’ has become confused. The hope should be that some intuitively appealing and workable notion of what it means to treat our planet in a ‘sustainable’ manner can be developed, and that sustainability can become a criterion in policy selection.” See AG Heyes & C Liston-Heyes, “Sustainable Resource Use: The Search for Meaning” (1995) 23:1 Energy Pol’y 1 at 3.
 11. Breen notes that FD Adams (then head of the House of Parliament Committee on Minerals) pointed out the importance of conserving depleting resources, which are held in trust for the present generation for future generations as far back as 1914. See Breen, *supra* note 9 at 28-30.
 12. For accounts of gas flaring in the Turner Valley, see Breen, *ibid* at xlix.
 13. According to Vaughan, in the early 1900’s so much gas was flared from the Turner Valley field, that it was said to be possible to read a newspaper at night in Calgary from the light produced from the flares. See J Vaughan, “Flare Vent and Reduction in Alberta: Approaches that Led to Success” (Paper delivered at the Gas Flaring Best Practice Workshop, Ciudad del Carmen, Campeche, Mexico, 11-12 February 2010) [unpublished] 1 at 3.
 14. M Brown & J Spangelo, “Protecting the Public Interest – The Evolution of Sulphur Recovery and Solution Gas Conservation in Alberta” (2005) 44:8 J Can Pet Technol 32 at 34.
 15. AR Lucas & C Hunt, *Oil and Gas Law in Canada* (Toronto: Carswell, 1990) at 200; Breen, *supra* note 9 at xviii.
 16. It is estimated that about 14.2 million metric cubes was flared daily and about 5 billion metric cubes annually. See Brown & Spangelo, *supra* note 14 at 34; Breen, *ibid* at xviii, xlix.
 17. From 1938 to 1957, the regulatory board was known as the PNGCB. From April 1957 to 1971, it was known as the Oil and Gas Conservation Board. See Breen, *ibid*. The Energy Resources Conservation Board (ERCB), which was created in 1971, was amalgamated into the Energy Utilities Board in 1996. It was changed back to the ERCB in 2007. For more details on the evolution of the conservation board, see MM Wenig & MC Moore, *Is “Conservation” Worth Conserving? The Implications of Alberta’s “Energy Resource Conservation” Mandate for Renewable Energy*, Occasional Paper #20 (Calgary: Canadian Institute of Resources Law, 2007) at 3, online: CIRL <<http://dspace.ucalgary.ca/bitstream/1880/47189/1/OP20Conservation.pdf>>.
 18. *Minerals and Mining Act*, RSA 2000, c M-17 [MMA].
 19. *Responsible Energy Development Act*, SA 2012, c R-17.3 [REDA].
 20. Its scope covers development and transportation. However, for the purpose of this article, I will limit my review to the exploration and production of natural gas.
 21. *Oil and Gas Conservation Act*, RSA 2000, c O-6 [OGCA].
 22. *Gas Resources Preservation Act*, RSA 2000, c G-4 [GPRA].
 23. *Environmental Protection and Enhancement Act*, RSA 2000, c E-12 [EPEA].
 24. *Climate Change and Emissions Management Act*, SA 2003, c C16 7 [CCEMA].
 25. The legislation and regulations that have been selected are those with a primary focus on conservation and the environmental aspects of gas development.
 26. World Bank Report, *supra* note 1 at 6.
 27. For example, countries such as Argentina, Peru, the United Kingdom, as well as the Canadian province of Alberta have adopted secondary legislation to address gas flaring and venting. See World Bank Report, *ibid*.
 28. OGCA, *supra* note 21.
 29. REDA, *supra* note 19.
 30. REDA, *ibid*, ss 2(1)(a)-(b) and 2(2)(f).
 31. The ERCA defined “energy resources” as “any natural resource within Alberta that can be used as a source of any form of energy.” As such, natural gas fell squarely within its purview of this Act. See the now repealed *Energy*



- Resources Conservation Act*, RSA 2000, c E-10, s 1(c) [ERCA].
32. ERCA, *ibid*, ss 2(c)-(d).
 33. OGCA, *supra* note 21.
 34. OGCA, *ibid*, s 4.
 35. CEEMA, *supra* note 24, preamble.
 36. CEEMA, *ibid*, ss 3(1)-(2), 4-5 and 10.
 37. EPEA, *supra* note 23.
 38. Clean Air Strategic Alliance (CASA) was established in March 1994 to manage air quality in Alberta. See “About CASA”, online: CASA <<http://casahome.org/About.aspx>>. CASA is a multi-stakeholder partnership, composed of representatives selected by industry, government and non-government organizations. CASA also has a multi-stakeholder flaring and venting project team. See CASA, *Gas Flaring and Venting in Alberta: Report and Recommendations for the Upstream Petroleum Industry by the Flaring and Venting Project Team* (Prepared by the Board of Directors of CASA, September 2004) 1 at 2, online: CASA <http://www.casahome.org/wp-content/uploads/2009/09/FVPT_Report_GasFlaringVenting_2004.pdf>.
 39. These operational issues include regulations that: restrict drilling, producing, the location of wells and facilities; the methods of operation to be observed during drilling, construction, management and conduct of any operations to prevent pollution; and prescribe the measures to be taken to control pollution above, or below the surface drilling wells and the production of oil and gas. See OGCA, *supra* note 21, s 10(2).
 40. OGCA, *ibid*, s 39(2).
 41. WF Lovejoy & PT Homan, *Economic Aspects of Oil Conservation Regulation* (Baltimore: John Hopkins Press for Resources For the Future, 1967) at 21.
 42. AER, *Directive 060: Upstream Petroleum Upstream Flaring, Incinerating and Venting* (ERCB: Calgary, 2006) at 13 [Directive 060].
 43. Vaughan, *supra* note 13 at 11.
 44. *Directive 060*, *supra* note 42 at 13-15.
 45. This is also known as the rate of return, and it is the required rate of return in a cash flow analysis above, which an investment makes sense and below which it does not. See online: Investor Words <http://www.investorwords.com/2362/hurdle_rate.html>.
 46. This is based on the calculation of the approximate sales volume required to just cover costs, below which production will be unprofitable and above which production will be profitable. See online: Investor Words <http://www.investorwords.com/574/break_even_analysis.html>.
 47. Brown & Spangelo, *supra* note 14 at 35.
 48. Brown & Spangelo, *ibid*. Wenig and Moore highlight a shift in attitude in the economic rationale for conserving solution gas. They point out that solution gas was previously conserved only when it was cost-effective from industry’s standpoint. In contrast, conservation is currently assessed on a cost effectiveness standpoint that is not driven by industry’s bottom line but by the public interest. See Wenig & Moore, *supra* note 17 at 31.
 49. The “Net Present Value” is defined as the sum of discounted, annual, before tax cash flows for the economic life of the solution gas conservation project, where each annual, before tax-cash flow is net of that year’s conservation project capital investment if any. See *Directive 060*, *supra* note 42 at 15. Note that as at the time of publication, there is currently under review, a Draft Revised Edition of *Directive 060*, which amongst other things, proposes an increase of \$55,000 NPV from \$50,000 NPV in the case of crude oil and crude bitumen batteries, and it also proposes that the AER may direct a licensee to conserve solution gas irrespective of the economics of it. See AER, *AER Bulletin 2013-17: Invitation for Feedback on Draft Revised Edition of Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting Requirements* (Calgary: AER, 2013) [AER Bulletin 2013-17].
 50. According to Vaughan, this effectively amounts to asking industry to use \$50,000 of oil revenues to pay for gas conservation. See Vaughan, *supra* note 13 at 12.
 51. *Directive 060*, *supra* note 42 at 15.
 52. ERCB, *Conservation in Alberta* (Calgary: 1980) 1 at 15.
 53. *Ibid* at 16.
 54. Vaughan, *supra* note 13 at 11.
 55. BM Murphy, ed, *Conservation of Oil and Gas: A Legal History, 1948* (Chicago: Section of Mineral Law, American Bar Association, 1949) at 23.
 56. Murphy, *ibid*. To Lowe, these provisions should be aimed at maximizing ultimate production and preventing physical and economic waste. See Lowe, *supra* note 9 at 26-27. See Marcia Neave, “The Conservation of Oil and Gas: A Comparative Study of On-shore Legislation in Australia and America” (1969-1970) 7 *Melb U L Rev* 201 at 210.
 57. ERCB, *supra* note 52 at 15.
 58. REDA, *supra* note 19, and particularly s 2(1)(a). Wenig and Moore opine that in the absence of a definition of conservation in the now repealed *Energy Resources Conservation Act* (ERCA), which was replaced by the REDA, its ordinary meaning may be employed to interpret it. According to them, the ordinary meaning of conservation subsumes waste prevention and implies that the references to energy “conservation” and waste prevention are equivalent. See MM Wenig & MC Moore, “Searching for Meaning in Energy Resource Conservation” (2007) 99 *Resources* at 2 [Searching for Meaning], online: CIRL <<http://dspace.ucalgary.ca/bitstream/1880/47039/1/Resources99.pdf>>. They have also opined that the meaning of conservation can be gleaned by inference from the ERCA’s other articulated purposes. Wenig and Moore however agree that a holistic view that takes other conservation statute, regulations and directives into account will provide a better picture of the meaning of oil and gas conservation in the Albertan context. See Wenig & Moore, *supra* note 17 at 11, 16. The same arguments can be applied to the REDA.
 59. OGCA, *supra* note 21, ss 1(ccc)-(ddd).
 60. OGCA, *ibid*, s 1(ddd).
 61. OGCA, *ibid*, s 1(ddd)(v); ERCB, *supra* note 52 at 15.
 62. OGCA, *ibid*, ss 1(ddd)(vi)-(viii). The OGCA defines “Market Demand” as the amount of oil or gas reasonably needed for current consumption, use, storage and working stocks within and outside Alberta. See OGCA, *ibid*, s 1(dd).
 63. GPRA, *supra* note 22, ss 5(b)-(d). Market waste includes



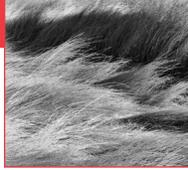


- the production of oil or gas in excess of actual demand for current consumption. See Murphy, *supra* note 55 at 264-265.
64. This may take the form of consultation and cooperation between energy ministries and environmental authorities before issuing permits or approving field development activities. See World Bank Report, *supra* note 1 at 17.
 65. EPEA, *supra* note 23, preamble.
 66. EPEA, *ibid*, s 40.
 67. EPEA, *ibid*, s 41.
 68. EPEA, *ibid*, s 43. For the EIA process, see EPEA, *ibid*, ss 44-52. For example, under the *Environmental Assessment (Mandatory & Exempted Activities) Regulation of 1993*, the construction, operation or reclamation of a sour gas plant, which emits more than 2.8 tonnes of Sulphur daily, is a mandatory activity for EIA. See *Environmental Assessment (Mandatory & Exempted Activities) Regulation of 1993*, Alta Reg 113/93, s 1(q).
 69. CCEMA, *supra* note 24.
 70. World Bank Report, *supra* note 1 at 19-25; Neave, *supra* note 56 at 212.
 71. For details on these conservation measures, which include unitization, improved recovery, prevention of gas flaring and gas-oil ratio penalty among others, see Breen, *supra* note 9 at xLv-L. Lucas and Hunt point out that although conservation legislation date back from 1926, well spacing requirements were first introduced by a 1933 amendment to the regulations under the *Oil and Gas Wells Act*: Lucas & Hunt, *supra* note 15 at 200. Breen also points out that conservation in the form of prohibition against the unnecessary waste of natural gas, the injurious access of water to bearing formations and measures to ensure proper closing of wells was added to the concerns of oil and gas development in 1914. See Breen, *ibid* at 23.
 72. OGCA, *supra* note 21, ss 37-38.
 73. OGCA, *ibid*, ss 38(a)-(b).
 74. *Directive 060*, *supra* note 42 at 13.
 75. OL Anderson, *Oil and Gas Conservation on Canada Lands* (Calgary: Canadian Institute of Resources Law, 1985) at 33, 91-92; JB Ballem, *The Oil and Gas Lease in Canada*, 4th ed (Toronto: University of Toronto Press, 2008) at 251-255.
 76. Neave, *supra* note 56 at 231-232.
 77. JT Cawley, "Oil and Gas Conservation in Saskatchewan" (1969) 7 Alta L Rev 347 at 348.
 78. OGCA, *supra* note 21, specifically, s 79(1), and generally, ss 79(1)-(6). Bankes provides a detailed analysis of the compulsory pooling provisions that used to exist under the Alberta OGCA. These provisions have since been amended. See N Bankes, "Compulsory Pooling Under the Oil and Gas Conservation Act of Alberta" (1997) 35 Alta L Rev 945.
 79. OGCA, *ibid*, s 80(1).
 80. OGCA, *ibid*, s 80(7).
 81. OGCA, *ibid*, s 84(1)(c).
 82. *Directive 060*, *supra* note 42 at 84.
 83. *Directive 060*, *ibid* at 12.
 84. It is recommended that the operators exchange production data and jointly consider clustering gas production or regional gas conservation systems. *Ibid*. Note that for multiwell oil or bitumen operations, licensees and operators are required to assess conservation measures on their projects regardless of distance. *Ibid* at 13. However, under the Draft Directive 060, the AER is empowered to suspend production at any such facility until the economic assessment of the feasibility of conservation is completed, giving more teeth to this provision. See *AER Bulletin 2013-17*, *supra* note 49 at 2.
 85. Neave, *supra* note 56 at 210.
 86. *R v Valente* No 2 [1985] 2 SCR 673 [*Valente*]. Even though Valente was centred on the question of judicial independence and impartiality, its broad criteria will be applied to the evaluation of the independence and impartiality of a regulatory body in this review.
 87. The court laid down the criteria for determining institutional independence and impartiality to include the following: (a) security of tenure – if for example, appointments can be terminated by the executive without cause, then such tribunal is not an independent tribunal; (b) financial security – which means that the right to financial remuneration such as salaries and pensions should not be subject to arbitrary interference by the executive in a manner that could affect independence, but be established by law; and (c) institutional independence – which has to do with its freedom to carry out the administrative duties that relate to the exercise of its functions. See *Valente, ibid*; Odumosu, *supra* note 1 at 101-102.
 88. *Valente, ibid*.
 89. *Ocean Port v British Columbia (General Manager, Liquor Control and Licensing Branch* [2001] SCR 781 [*Ocean Port*].
 90. *Ocean Port, ibid*; Odumosu, *supra* note 1 at 103.
 91. World Bank Report, *supra* note 1 at 8.
 92. *Ibid*.
 93. Scott Hempling, "Effective Regulation: Do Today's Regulators Have What It Takes?" in Gordon Kaiser & Bob Heggie, eds, *Energy Law & Policy* (Toronto: Carswell, 2011) at 542.
 94. REDA, *supra* note 19, ss 2(1), 3-8.
 95. REDA, *ibid*, ss 3-4; RJ Harrison, L Olthafer & K Slipp, "Federal and Alberta Energy Project Regulation Reform – At What Cost Efficiency?" (2013) 51:2 Alta L Rev 249 at 250.
 96. Harrison, Olthafer & Slipp, *ibid* at 270.
 97. *Ibid* at 269-270.
 98. *Ibid* at 270.
 99. *Ibid* at 270-271. For more on this line of argument, as well as the impact of imposed timelines on the regulatory independence and procedural fairness of the AER: see Harrison, Olthafer & Slipp, *ibid* at 271-272.
 100. *Ibid* at 250.
 101. Hempling, *supra* note 93 at 542-546. See also the repealed ERCA, *supra* note 31, s 3.
 102. For discussions on public interest, see Monique Passelac-Ross & Adam Zelmer, *Public Participation in Alberta's Energy and Natural Resources Development: Is There Room for Improvement? Conference Handbook* (Calgary: Canadian Institute of Resources Law, 2010) 1 at 15-16.
 103. ERCA, *supra* note 31, s 3.
 104. Passelac-Ross & Zelmer, *supra* note 102 at 15.



105. GPRA, *supra* note 22, s 8. While this review is limited to exploration and production, the GPRA has been considered because the protection of the interest of future generations is a feature of sustainable development.
106. Anderson, *supra* note 75 at 77. Neave notes that it is usual for conservation statutes to include provisions that ensure that notice is given to interested parties, and hearings held before conservation authorities take actions. See Neave, *supra* note 56 at 210.
107. See the repealed ERCA, *supra* note 31, s 3.
108. *ERCB Directive 056: Energy Development Application and Schedules* (AER: Calgary, 2011) 1.1 at 5.4 [*Directive 056*]. Alberta's *Directive 056* defines notification as the distribution of project specific information to participants, defined to include organizations, communities, groups or individuals with a stake in the discovery and development of natural resources. See *Directive 056*, Appendix 3, *ibid*.
109. *Directive 056, ibid*.
110. This information includes the definition of solution gas and its conservation and use, an explanation of the solution gas flaring, incinerating and venting management options and the decision tree process, and results of the decision tree analysis, a description of the specific actions the operator will take to eliminate or reduce the flaring, venting or incinerating or improve its efficiency, information about the individual's right to object and a list of relevant contacts among other things. See *Directive 060, supra* note 42 at 16.
111. *Ibid*.
112. The residents are at liberty to determine when to be consulted; as such it may be annually or bi-annually. *Ibid*.
113. *Directive 056, supra* note 108, s 5.4.
114. *Alberta Energy Regulator Rules of Practice*, Alta Reg 99/2013, ss 9(1)-(2), and particularly ss 9(2)(c)(i)-(ii) [Rules of Practice].
115. Passelac-Ross & Zelmer, *supra* note 102 at 22-24. See the repealed ERCA, *supra* note 31, s 28.
116. This excludes persons whose business includes the trading in or transportation or recovery of any energy resource. See the repealed ERCA, *ibid*, s 28(1).
117. On the payment of intervener's costs, see the repealed ERCA, *ibid*, ss 28(2)-(7).
118. REDA, *supra* note 19, s 61(r).
119. Rules of Practice, *supra* note 114, s 58(10)(c).
120. *Ibid* at s 58.1, and more particularly, ss 58.1(b), (i) and (j).
121. REDA, *supra* note 19, s 34(3). In respect of the same wording under the repealed ERCA, see Passelac-Ross & Zelmer, *supra* note 102 at 22.
122. For the tests used to determine persons who qualify as being "directly and adversely" affected, and the difficulties posed by these tests, see Passelac-Ross & Zelmer, *ibid* at 18-21.
123. *Responsible Energy Development Act General Regulations*, Alta Reg 90/2013 [General Regulations].
124. *Ibid* at s 3; Harrison, Olthafer & Slipp, *supra* note 95 at 274.
125. Passelac-Ross & Zelmer, *supra* note 102 at 20; *Directive 056, supra* note 108.
126. REDA, *supra* note 19, ss 34(1); Harrison, Olthafer & Slipp, *supra* note 95 at 273.
127. According to Passelac-Ross and Zelmer, the implication is that even if interested and concerned parties were to be granted standing to intervene at a hearing, there is no guarantee that they would have the financial resources to do so. Passelac-Ross & Zelmer, *supra* note 102 at 22.
128. The directly affected persons test has been dealt with above under the issue of standing. See *ibid* at 22-24.
129. Rules of Practice, *supra* note 114, s 64.
130. EPEA, *supra* note 23, s 40.
131. Passelac-Ross & Zelmer, *supra* note 102 at 7-8.
132. For the EIA process, see Passelac-Ross & Zelmer, *ibid*; EPEA, *supra* note 23, s 44(6).
133. This idea is in line with Walde's practical approach, and entails the translation of revenues from mineral development into long-term economic and social capital. See Walde, *supra* note 10 at 120, 125-126, 130-131 and 149.
134. For discussions on the idea of sustainability funds, see Onuosa, *supra* note 7 at 444-445.
135. For the specific purposes of this fund and its funding, see CCEMA, *supra* note 24, ss 10(1)-(6).
136. For more on this fund, its purposes, administration and funding, see EPEA, *supra* note 23, ss 30(1)-(12). There is also an Environmental Protection Security Fund, whose purpose appears to be related to surface reclamations. See EPEA, *ibid*, s 32(1).
137. *Alberta Heritage Savings Trust Fund Act*, RSA 2000, c A-23.
138. *Alberta Heritage Savings Trust Fund Act, ibid*, preamble, ss 2(1)-(3).
139. *Alberta Heritage Savings Trust Fund Act, ibid*, ss 9(1)-(4). For the definition of "non-renewable resources revenue", see *Alberta Heritage Savings Trust Fund Act, ibid*, ss 1(d)(i)-(v). See also MMA, *supra* note 18, s 1(91)(p)(i) for the definition of minerals, and s 9(a) for the agreements respecting the disposition of minerals.
140. *Ibid* at 19-20.
141. Vaughan, *supra* note 13 at 13.
142. AER, *Directive 019: Compliance Assurance* (Calgary: 2010) 1 at 14 [*Directive 019*].
143. *Directive 019, ibid*.
144. Compliance Assurance utilizes these three tools by conducting (a) an education activity to promote and raise awareness of AER requirements, inform on how to comply with requirements, and explain the consequences of noncompliance; (b) a prevention activity to address and prevent recurrence of noncompliance events; and finally (c) an enforcement activity by applying remedial, deterrence, and punitive measures to achieve compliance with the AER's requirements. See *Directive 019, ibid* at 1-3.
145. Vaughan, *supra* note 13 at 19, 22.
146. For the enforcement process, see *Directive 019, supra* note 142 at 4-10.
147. Vaughan, *supra* note 13 at 13. Low risk enforcement actions that have not been made subject to refer status or board orders are not publicly reported. The summary, which includes company names is contained in a report titled *ST108: AER Monthly Enforcement Action Summary*, which is posted on the AER website. See *Directive 019, ibid* at 3-4, 13-14.
148. OGCA, *supra* note 21, ss 105(1)(a)-(e). For details on all





the enforcement measures that may be taken to achieve compliance, see *Directive 019, ibid* at 4-11.

149. OGCA, *ibid*, ss 107(1)-(3).
150. Corporations are liable to a fine of not less than \$300 or more than \$1,000, and individuals, to a fine of not less than \$50 or more than \$500. See OGCA, *ibid*, ss 110(1)-(2).
151. OGCA, *ibid*, s 25(a); *Directive 019, supra* note 142 at 9-10.
152. OGCA, *ibid*, s 44; *Directive 019, ibid*.
153. Vaughan, *supra* note 13 at 18; *Directive 019, ibid* at 9.
154. Demonstrated disregard is a situation where a licensee knows or should know about a high-risk non-compliant issue or event but does not take any steps to address the non-compliance. See *Directive 019, ibid* at 11, 14.
155. OGCA, *supra* note 21, ss 107-108; *Directive 019, ibid* at 16.
156. Alberta Energy, "Natural Gas Brochure", online: <http://www.energy.gov.ab.ca/NaturalGas/Gas_pdfs/brochurehub.pdf>. According to Vaughan, the fundamental change in thinking on the value of flared gas, and the engagement of all stakeholders and affected parties eventually became some of the reasons for Alberta's gas conservation success. See Vaughan, *supra* note 13 at 4.
157. Brown & Spangelo, *supra* note 14 at 34. In 2008, 95.4% was conserved; in 2009, 95.8% was conserved; and in 2012, 94.2% was conserved. For more on conservation trends and percentages in Alberta, see AER, *ST60B: Upstream Petroleum Industry Flaring and Venting Report: Industry Performance for Year Ending December 2009* (Calgary: ERCB, November 2010) at iii [ST60B-2010]; and AER, *ST60B: Upstream Petroleum Industry Flaring and Venting Report: Industry Performance for Year Ending December 2012* (Calgary: AER, October 2013) at iii [ST60B-2012].
158. OGCA, *supra* note 21, s 4(a); Vaughan, *supra* note 13 at 4.
159. REDA, *supra* note 19, ss 2(1)(a)-(b).
160. OGCA, *supra* note 21, s 4(c).
161. Harrison, Olthafer & Slipp, *supra* note 95 at 267-282.
162. *Directive 060, supra* note 42 at 19; Alberta Energy, "Otherwise Flared Solution Gas Royalty Waiver Program (OFSG) Wells", online: Alberta Energy <<http://www.energy.alberta.ca/NaturalGas/1139.asp>>. The 10-year waiver is independent of end-use of the solution gas, and the royalty will be waived on otherwise flared solution gas and associated by-products when used in a manner that would normally require payment of royalty. See Alberta Resource Development, *Information Letter 99-19: Otherwise Flared Solution Gas Royalty Waiver Program*, 11 June 1999, online: Alberta Energy <<http://inform.energy.gov.ab.ca/Documents/Published/IL-1999-19.PDF>>.
163. The CASA Flaring Project Team Report of 1998 first initiated the significant reductions in flaring and venting in Alberta's gas industry. See CASA, *supra* note 38.
164. *ST60B-2010* and *ST60B-2012, supra* note 157.
165. AER, *ST60A: Crude Oil & Crude Bitumen Batteries Annual Flaring, Venting, & Production Data* (Calgary: AER, 2013).
166. CASA, *supra* note 38 at 5; *Directive 060, supra* note 42.

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MEXICO'S ENERGY REFORM

Article by Verónica de la Rosa Jaimes, Ph.D. ♦♦

The monopoly that state-owned Petroleos Mexicanos (Pemex) had for several decades ended late December 2013 when the Mexican government passed the energy reform. An amendment to articles 25, 27 and 28 of the Mexican Constitution was approved by the Senate and lower Congress, as well as by most of the state legislatures. The amendment was enacted on December 20, 2013, by the President of Mexico and came into force the day after it was published in the Official Federal Gazette (Diario Oficial de la Federación).

This constitutional reform promotes foreign investment and allows private companies to participate in the energy sector by introducing new types of contracts, such as service, profit sharing, production sharing and licenses. In profit-sharing contracts, oil firms will be paid with a percentage of the profit. In production-sharing contracts, the production will be divided between the government and the companies and in the case of the licences, private investors will pay royalties and taxes to a soon-to-be-created oil holding trust that will be run by Mexico's Central Bank. The private corporations will be able to count the reserves on their books; however, Mexico would still claim full title to hydrocarbons. The amendment also confers discretionary powers on the National Hydrocarbons Commission and Energy Regulatory Commission, which will work together as industry regulators. The participation of Union members in the Pemex Board of Directors will be reduced.

This is an historical amendment that opens up Mexico's reserve potential — particularly for deep-water, shale gas and electricity — to private investment and participation. In August 2014, Mexico's Congress approved secondary legislation implementing reforms for the liberalization of the energy sector, and in October 2014, the regulations were passed. The new legal framework for energy in Mexico represents two major changes for the industry. First, an entire transformation of PEMEX and the Compañía Federal de Electricidad (CFE, Federal Electricity Company) both prior to the reforms had enjoyed monopoly status, and now will become competitive enterprises facing for the first time foreign competition. Second, it will represent for the oil and gas sector the opening of the upstream, midstream, and downstream to private participation, as well as the opportunity for the private sector to generate electricity for sale in a competitive open market. This reform will create opportunities for investment, partnerships, and advisory roles for foreign governments and companies. Canada, and specially Alberta, must follow its development closely.

♦♦ Dr. Verónica de la Rosa Jaimes is an Eyes High Post-Doctoral Scholar in the Faculty of Law, University of Calgary and is a Research Fellow in the Canadian Institute of Resources Law. She is researching energy development and climate change litigation and is a sessional instructor of the course "Climate Change Law" in the Faculty of Law, University of Calgary.

For more complete information on Mexico's energy reform, see the presentation that was made on [An Overview of the Mexican Energy Reform](#) by Dr. Verónica de la Rosa Jaimes and Annette Rodriguez Lomeli at the Cenovus Continuing Legal Education event on December 2, 2014.

CIRL STUDENT NATURAL RESOURCES LAW WRITING COMPETITION

In April 2014, the Canadian Institute of Resources Law (CIRL) announced the CIRL Student Natural Resources Law Writing Competition. The winner receives a cash prize of \$2,500 with a prize of \$1,000 for the second place paper.

The Institute is pleased to announce that the first place prize winner is Josephine Victoria Yam for her article,

"The European Union Emissions Trading Scheme: Criteria Evaluations & Lessons Learned". Ms. Yam's article will be featured in the next issue of *Resources*.

The second place prize went to Giorilyn Bruno for her article, "Reflections on Ecosystem Services: A Step Forward in the Protection of Nature?".



UPCOMING NATIONAL SYMPOSIUM

A national symposium on **Environment in the Courtroom: Evidentiary Issues in Environmental Prosecutions and Hearings**, funded by Environment Canada, is being organized by the Canadian Institute of Resources Law (CIRL), which is part of the Faculty of Law at the University of Calgary and the Canadian Bar Association. This is the fourth national environmental law symposium organized by CIRL. During the last three years, practitioners, judges and academics from across Canada have attended and contributed to the discussion of current important environmental law issues. Attendees at previous symposiums have indicated that the information that has been provided is both practical and useful. We encourage active audience participation in the panel discussions. This year the symposium will be held at the University of Calgary in the Faculty of Law on **Friday March 6 and Saturday March 7, 2015**.

There will be a series of speakers who will discuss topics such as:

- Cross-country Check-up on Environmental Prosecutions Across Canada
- Science Primer for Environmental Prosecutions – What You Need to Know But Were Afraid to Ask
- Proving Causation: Scientific Certainty Versus the Legal Burden of Proof
- Hot Issues in Environmental Enforcement
- Who Qualifies as an “Expert” in Canadian Environmental Cases
- The Basics of Expert Evidence
- How to Prepare an Expert Witness
- Preparing an Expert Report/Restrictions on Communications with Experts
- Challenges with Continuity of Evidence in Environmental Cases
- Integration of Written and Visual Evidence for Expert Tribunals
- Privilege in Environmental Enforcement Context
- Judicial Notice

Registration is free of charge. There will be networking opportunities with practitioners from throughout Canada to find out about recent developments and current issues in Canadian environmental law. Both days will include refreshment breaks and lunch, and following the first day of the symposium on Friday March 6, there will be a Networking Reception for attendees.

To register, please visit the CBA conference webpage at www.cbapd.org/details_en.aspx?id=NA_ENV15. Non-CBA members will be required to create a login username and password. Please indicate whether you are attending in person or viewing the live webcast. For general inquiries, please contact Sue Parsons, Canadian Institute of Resources Law, e-mail sparsons@ucalgary.ca or phone 403-220-3200.

Past symposium papers and podcasts are available for download on CIRL's website: www.cirl.ca.

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