Centre for Energy, Petroleum and Mineral Law and Policy
University of Dundee

# CEPMLP Annual Review (CAR)

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# PREFACE

Each year over the past decade the current CEPMLP Annual Review (CAR) has reached a stage where one tells oneself that the diversity of the contents and the standard of the papers submitted by students gaining top distinctions have peaked and surely cannot be improved upon any further. However, yet again the writer has been proved wrong.

The joint Co-editors-in-Chief for this Edition, Olayinka Obagun and Adebola Ogunlade have kept their fingers firmly on the thematic pulse to produce a yet more diverse range of topics than those covered in the previous reviews. The selected twenty themes covered in this issue continue to feature the pros and cons of ongoing key issues such as arbitration, advantages of developing the energy and natural resources industries towards promoting sustainable development, and aspects of power generation which have become critical cost wise as the price of crude oil explores new levels. In the current CAR issue we benefit from the insight of the stance adopted by the main contributors.

The writer believes that it is important at the outset to clear up any possible misconceptions that Chief Editorships perhaps may be viewed as a relatively easy academic alternative for obtaining credits towards a Masters Degree. On the contrary after working in close co- operation with the Editor/editor(s)- in- Chief for the past decade one can truly say that the role is in fact an exacting one that tests the incumbents to the limit in terms of academic knowledge, analytical capabilities, leadership and management skills and getting the best out of their advisory team of sub-editors as well as cajoling their at times prima-donnish star authors.

It has been the CEPMLP policy in recent years to encourage the Chief Editors to also submit papers for publication in the journal to demonstrate intellectual flairs as well as their abilities for sheer hard work and organisational skills. It is re-assuring to note that in every case their contributions were numbered amongst the very best of the annual crop!

As the Editors-in-Chief note in their current introduction and overview, CAR has expanded considerably this year to embrace additional management components such as Marketing, Project Management in Energy and Natural Resources Industries, Strategic Management and related issues such as Economics for Business Managers.

Current wisdom also picks up on 'other changes in the wind' which are gathering momentum. There seems to be a groundswell of nostalgia for 'the good old days' in which the UK prospered on the strength of our industrial engineering skills which we seem to have conceded in favour of our less predictable reliance on so called invisibles and banking. This also could prove a fertile field for further contributions in future.

In particular the 'show casing role' of the Editorial board is well executed and the traditional pro-active approach which characterises the CAR profile is not only maintained but has expanded further into new areas.

The focus of the processes to mitigate and control as far as possible the depredations caused by climate change again emerges as a key issue. Also to the fore are land use conflicts involving Indigenous Peoples rights and also environmental and social issues which comprise the themes addressed in nine of the contributions to the current CAR. Another emerging key theme that falls within this category is gaining sustainable advantage in the context of teamwork. It is interesting to note that there seems to be a shift in emphasis in the latter context towards a team comprising individuals with specialist in depth skills rather than all rounders. Translated into practical terms this change appears to put a premium on the skills bestowed through Masters Degrees.

Just as the atomic industry was beginning to shrug off the shadow of Chernobyl and confidence started to return to the industry the Tsunami disaster in Japan has involved the damaging of a nuclear reactor in the Tokyo area. It is to be fervently hoped that that the damage will not lead to a radio-active leak. Otherwise atomic energy upon which many are pinning their hopes as a prominent component in the fuel mix may have to be heavily discounted. If this situation eventuates it will undoubtedly feature in next year's CAR!

Looking ahead to the potential ultimate dominance of gas from shale as the dominant future leading energy commodity on account of its less emphatic footprint compared to other hydrocarbons it really does seem that the key players will finally take this on board. That is provided a viable solution cannot be found for the sequestration of GHG's from coal fired energy plants.

The strong emphasis on energy related issues underscores international preoccupation over the future of the energy mix particularly in the light of the present public concerns over the exorbitant current price of crude oil. This has certainly revitalised research into alternative sources of fuel.

With the publication of the largest number of papers to date in our CAR journal including a range of new topics for the first time the writer is confident that the readership will be spoilt for choice. The Co-Editors in Chief, their team of experts and all the student authors deserve warm congratulations on putting together the most diverse topic wise CAR to date which was no mean achievement.

Dr. Arthur Warden

CEPMLP

# INTRODUCTION AND OVERVIEW

The importance of the Energy and Natural Resources Sector cannot be over emphasised, as we rely on these sectors very heavily for every facet of life. However, its controversial nature has led some commentators to conclude that some countries are better off without natural resources as they avoid the "Resource Curse". The Centre Annual Review (CAR) is an Academic peer Review that reviews the work of students at the Centre for Energy, Petroleum and Mineral Law and Policy (CEPMLP) who have attained an A grade in their research papers. Their peers review these papers and ensure that only the best papers are published to maintain a high standard Publication. In keeping up with the research goals at the CEPMLP, this year's CAR publication is no exception. Drawing from a huge range of issues that affect the industry as a whole, this year the Editors-In-Chief and their Editorial team have focused on the broadest range of topics that CAR has tackled to date. Focusing not only on the legal and policy aspects, this year the publication also features papers from various management components such as Marketing, Project Management, Management in Energy and Natural Resource Industries, Strategic Management and Organisational Analysis and Economics for Business Managers and a wide range of other modules.

**General Overview:**

There is a lot of change occurring in the industry which this publication will reflect. The Industry is changing at a fast pace. However, some of the debate and controversy surrounding it still lingers like an overarching shadow. The consolidation of the industry in the late 1990s was incredibly rapid, largely triggered by financial stress caused by the very low oil prices in 1998 following the Asian financial crisis. The credit crunch cannot easily be forgotten either. The 2007/2008 financial crash impacted on investments in the European Gas market. The credit crunch caught us with a surprise whim in August 2007. The economies of many nations, such as the UK and the USA are still recovering. Its impact trickles down from the effects of balance sheet crashes of banks, inabilities of households and businesses to finance existing debt and further credit based consumption.

Consequent higher external finance premiums have rippled through economies to affect wealth, capital, consumption and investment demand. The European Gas market has been largely unscathed by economic feedback from this phenomenon. A paper by Olufesobi Bright concludes by stating that investments in the European gas market are not evaporating any time soon and may not decrease substantially in the short term.

In 1998, Exxon, Mobil, BP, Amoco were all separate companies. However these companies merged because they understood that the bulk of their future production capacity will come from high cost sources such as the tar sands and the deep offshore targets and the recognition of the substantial savings available by stripping duplicated costs after a merger. A perceptive by Abba Issa Abubakar highlights the importance of mergers and acquisitions from a strategic point of view using the ConocoPhillips acquisition of Burlington resources as a case study. The BP Disaster in the Gulf of Mexico sparked a fresh debate on what safety mechanisms the oil and gas industry has in place. The Presidential Commission stated in its report, the GoM was an avoidable disaster caused by a series of failures and blunders made by BP and its partners and government departments assigned to regulate them. It warns that such a disaster could reappear due to the complacency of the industry. The industry needs to be regulated and a standardised set of rules that will be enforceable in all countries in their search for hydrocarbons must be the minimum set of requirements for oil and gas companies. Offshore drilling is very risky but the rewards are great. With these rewards is oil really finishing or has the world consumed most of its oil? We think not! Oil is still here to stay. As the worlds addiction to oil is paid for by more offshore drilling, we can still expect that it will continue to be the fuel “in the present”. It is now predicted that Russian and Persian gulf producers will no longer dominate energy supplies to the EU. In Russia’s bid to remain one of the top oil nations, it has opened up its Arctic reserves to BP and Rosneft to explore for offshore oil in the Kara sea. It is hoped that the same mistakes that led to the Gulf of Mexico disaster will be avoided and better regulations will be in place to monitor the industry, as an Arctic spill will be harder to contain than the spill in the Gulf of Mexico. And this will cast more doubts on the industry. An interesting question is what happens to the environment and what

impact will it have on the Kyoto targets? The world should rely less heavily on fossil fuels and should move towards cleaner forms of energy that emit less. If anyone was in doubt about the impact of climate change, the last two winters in the UK confirm that the threat is real and action needs to be taken now. In recent years innovative unilateral initiatives have been developed to address the issue of Climate Change, which go further than the emissions reduction target established under the United Nations Framework Convention on Climate Change, introducing a sectoral approach that encourages investment in more efficient capital and operating practices on a public policy basis. The European Union will like to assert their dominance by being the clear leaders in the climate change sphere. However, various efforts by states in the USA shouldn't be overlooked. Carlos Cortes Simon analyses the effectiveness of climate change control initiatives at a national - sectoral level and uses California as a case study. The state of California, for example, has recently imposed legally-enforceable limits on greenhouse-gas emissions—the first state in America to do so, establishing the world's first comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases. Gauthem Nageshwaran conducts a market opportunity study for the hydrogen fuel car. As more countries seek to find ways of reducing their emissions, this is of particular importance as well. Will it be feasible? As with most facts of life, only time will tell.

The International Energy Agency (IEA) has estimated that the world energy demand will increase by more than 50% by 2030 and fossil fuel will contribute to more than 80% of the world energy consumption by 2030. Therefore, the world faces the climate change challenge and global concern of reducing GHG emissions (especially carbon dioxide - CO2) that result mainly from the combustion of fossil fuels. (Coal, natural gas and oil).However, Carbon Capture and Storage (CCS): the capture of CO2 from industrial installations, its transport to a storage site and its injection to suitable underground geological formation for permanent storage has emerged as a potential measure and a bridging technology to help mitigate the effect of climate change due to the release of CO2. Although it is more politically driven, than technologically driven it is still important. If successfully deployed, it will create jobs which will help the economy and hopefully help the government gain

momentum. More importantly, it will help combat climate change. Despite the emergence of CCS as a potential bridging technology for mitigating climate change, it has continued to face a lot of commercial, financial, social and legal challenges that affect its deployment and development. A good paper by Oladotun Ayeni gives a well presented introduction to CCS and seeks to address the key elements that would make CCS achieve its purpose as a viable mitigation tool for climate change. If implemented successfully, CCS will be one of the most popular technologies that exist, primarily because it does not require a drastic change of habits. However the legal implications if it fails in relation to liability implications are huge. Leakage from storage sites is a real threat and Nkaepe Etteh takes us through the possible implications of what would happen if there is a leakage and the catastrophic consequences that would ensue. High liability costs also add to the scare of deploying it on a big scale. Liability can be either strict or fault based liability. The EU CCS regime establishes a strict liability regime for Carbon Capture and Storage Operators which covers leakage. In the event of leakage, the operator has to take corrective measures. However, the liability imposed does not cover physical harm or economic loss. The potential grounds for fault based liability are trespass, nuisance and negligence. To avoid any potential liability an operator will be well advised to purchase insurance to cover the costs.

Various countries are determined to break their dependence on fossil fuels due to a number of reasons. High import dependence (being vulnerable to the exporters) is one of the most important reasons. In his State of the Union in January 2011 President Obama stressed the importance of investing in tomorrow's energy and that congress should stop subsidising yesterday's energy (referring to oil). The omnifarious oil shocks led to multifarious countries actively considering other sources of energy by diversifying their energy mix and increasing security of supply. In Europe oil and gas are being drained from under the North Sea, but along its shores and on its waters, thousands of turbines are being built to harness the winds. Renewable sources of energy are relied on more heavily. Ethanol has also become an important source of energy. Using ethanol has sparked some controversy. How ethical is it in an era where millions of people suffer from hunger? Biofuels may have an impact in freeing the world from fossil fuels. The original 1970's appeal has grown.

Over time, the opportunity to fight global warming added to the original energy security appeal because of its ability to make petrol out of plants in a sufficiently clever way and with no net emissions of carbon dioxide. Olubode Banjoko gave a thorough analysis of Shell in the new decade. Recording a loss at the end of 2010, they are more determined to invest in various projects. To be successful, they have to change the culture of the organisation by being more innovative. This paper gives various recommendations and cites various management practices that will ensure that they are key to business growth and the success of Shell such as Knowledge management and transfer.

Following the crescendo in environmental awareness, especially viz-a- viz natural resource extraction activities, pressure is increasingly being exerted on the various industries by national government, NGOs and the general public to implement policies of social responsible investment. Due to the capital intensive nature of these industries and standard practice of utilising project finance, this attention has, however, extended to include lenders and capital investors of these ventures. To this extent, Leon Gerber in his paper examines the consequences of Safety, Health and Environmental (SHE) risks on project finance, in particular as it applies to the mineral extraction sector. He highlights the general requirements of project finance, and some of the risk particular to the financing of mining ventures. Thereafter, he analyses the effect of these risks on the lending mindset and discusses some of the means available to the investors with which to limit the said risks. He argues that SHE risks form a very real part of the consideration by lenders, when contemplating the investment into a limited recourse, project-funded venture, stating that the risk in itself differs widely, based upon the type of operation, and is a distinctly vague concept, due to uncertainty of probability and the lack of means to quantify the extent of damage that may result in the case of an accident. As such, he suggests the most viable manner in which to mitigate the risk that may result from such accidents, are by means of a precautionary approach by lenders. He submits that though this approach may result in an increase in initial capital investment, the reduced risk probability of significant accidents, coupled with the gains made in opportunity cost for both the project company, and the financial investors, offsets the initial inconvenience. With rapidly

maturing conventional oil and gas fields, slowing production and increasing demand, the importance of unconventional hydrocarbons i.e. petroleum that cannot be extracted by using traditional drilling methods - as a source of energy, are being brought to the fore. Oil sands (frequently referred to as oil shale) now account for 6.5% of world oil output, up from 3.6% at the start of the decade. This growth has been spurred by high oil prices and strong demand from the US, which sees unconventional oil as a part of the solution to its energy security issues. Numerous oil shale development projects are being planned or under construction, trying to capitalise on the success of other deals. However, oil shale projects continue to face unique challenges in financing. Sima Ajam focuses on what Developers and Governments can do to minimise Lending Risks and attract Debt Financers to Oil Shale Developments and examines the key characteristics of oil shale and provides a critical analysis of the main lending risks associated with debt financing oil shale developments. In the author's view, many of the lending risks that threaten the oil shale sector's profitability and its ability to secure financing sit outside the resource itself and the technology used to make it into oil. Using information from various approaches adopted in successful international developments, the author suggests ways to mitigate lending risks, through co- operation between developers, sharing of know-how and technology, utilisation of existing infrastructure and government policies that address price and market risks can encourage financing frameworks that give lenders sufficient comfort to undertake long term investments in oil shale developments.

Rising oil prices and failing production costs favour the extraction of oil from Alberta's tar sands. Alberta has become the flag bearer of a new oil age. However the environmental objections are fierce. The tar sands contain the world's second largest trove of oil. Despite its recent development in the past decade, the sands only produce less than 2% of global supply. However, the sheer dirtiness of importing Alberta's bituminous oil is a cause for concern. Added to this is the domestic opposition to exploiting the tar sands and building pipelines is gaining more momentum. A flock of national companies have established their presence there. At 173 billion recoverable barrels, the tar sands are worth $15.7 trillion at today's price: (The Economist: Jan 22 2011) By 2030 according to IHS CERA a firm of

consultants the tar sands should supply more than one third of America's imported oil. However environmentalists are against this development. The most important question is whether Alberta's government can promote greener tar sands. At the moment this is questionable. Some environmental problems can be solved fairly easily. For example a long standing idea is to create a large wildfire refuge in areas that will be eventually tapped for bitumen. If Alberta's tar sands are killed, rising crude prices would choke oil consumption and force an era of clean energy into being. Although, this argument holds no substance because the USA is the biggest oil buyer and this will be the case for decades to come. The USA will rather buy oil from Canada than from the Middle East and Venezuela. Regardless of this, environmental considerations should still be considered. The bone of contention on the part of the conservationists seems to hinge on the inadequacy of the water supply needed which they claim impacts on essential supplies and pollution.

With regards to climate change and water security, Silas Garba considers these two issues and evaluates the challenges of managing transboundary water resources. Water insecurity occasioned by unsustainable human activities and climate change is one of the major challenges of the world today. Particularly for international fresh waters, it is a challenge for transboundary watercourse law and management. The Lake Chad Basin (LBC) as one of the major international fresh water lakes in the world has been severely hit by this crisis in recent times. Within forty years, the lake had lost about 90% of its size; exposing its dependant population to water scarcity and food shortage. The Basin's main legal regime is the Convention and Statutes Relating to the Development of the Chad Basin signed at Fort Lamy, Chad, in 1964. Several programs have been adopted as solutions to the declining lake, but no mention has been made of the adequacy of the Convention. This author conducts an analysis, through the critical eyes of development in transboundary watercourse law and the changes in the Lake Chad Basis, of the adequacy of the 1964 Convention to meet the challenges of saving Lake Chad. The paper concludes by stating that the provisions of the Convention are not adequate to manage adverse effect of human and climatic activities in the LCB nor can it sustain the various programs.

Dramatic developments over the past years in the US shed a new light on the priorities for various energy forms. This will have a huge impact on the proportions and the types of energy involved in the energy mixes adopted by the main consumers. It is claimed that the competent energy sources will change from costly dwindling hydrocarbon reserves to an ultimate glut with dramatic price reductions to the ultimate benefit to the consumer. Gas from shale has become the next big thing! The USA is in the firm lead as the world's main producer of energy from shale. Poland now has huge potential to develop gas from shale. This new form of energy is a serious contender to the favourite forms such as nuclear energy and renewables. Gas from shale is not a new phenomenon. Shale gas has been produced for 100 years in the Appalachian and Illinois Basins. A significant content of organic material has been known for many years because shale does not easily permit fluid flow to a collecting well due to lack of permeability for the escaping gas to flow. An effective technology was recently devised to release the occluded gas. The geological risk of not finding gas is low and the profits from successful wells are relatively modest. The low matrix permeability of shale has to be assisted by controlled fracturing. Even though gas has been produced for years from shale it is only that the retention problem has been overcome by the application hydraulic fracturing.

Higher natural gas prices and advances in hydraulic fracturing and horizontal completion have enhanced profitability. Shale gas costs more than that derived from conventional wells due to fracturing costs and horizontal drilling but may be compensated by low risk. However, when methane leaks are included the life cycle of the greenhouse gas footprint of shale gas would be worse than those of coal or shale oil. When chemicals are added to the water to facilitate underground fracturing to release the natural gas, it results in contaminated water which has to be kept in underground ponds to await or tinkering or injection back to the ground. These affect the environment and careful consideration must be paid to ensure these aspects are prevented and if it happens there is a well detailed response plan to contain it.

George Kobani in his paper discusses what lessons Nigeria and other capacity short countries can learn in risk spreading in Power Purchase Agreements (PPAs). He argues that Power Purchase Agreements have become the last option for capacity short countries trying to develop their generation capacities as any refusal on their part to sign them may result in zero or very minimal investment in the power sector and a huge Government responsibility for bearing a variety of risks. He highlights the similarities and difference in the allocation of risks and identifies the shortcomings in the PPAs for the Dabhol independent power project in India and the Bujagali hydro electric project in Uganda. He observes that many capacity short developing Countries bear too much of the risk in infrastructure projects. Whilst on the other hand, the project developers need to necessarily hedge their positions in order to assure a profit and secure financing for the projects. In concluding, he suggests a checklist for capacity short Countries that need to sign power purchase agreements in their future Power Projects, if their Governments want to reduce risk.

The generation of electricity from Nuclear is increasingly becoming a topical issue in the energy industry. While the investment costs are high, there are arguably long term advantages due to the low levels of fuel imports required, its suitability for security of supply, and its non-carbon nature. Mark Blackburn and Adeleke Ademola discuss the future of nuclear power in a liberalized electricity generation market, the former specifically exploring the UK electricity generation market. Mark Blackburn examines the levers the UK society has, to control the fuel mix in the long term to meet carbon emission and security of supply goals with Nuclear power as a centrepiece of any plans made to meet these requirements. He argues that the future of nuclear power depends upon whether the private sector will invest in new power stations if given various incentives so that nuclear generation will continue at its present level and perhaps exceed historical market shares. Adeleke Ademola argues that Nuclear power is the direction of the future. In his view, the success or otherwise of harnessing nuclear power will be subject to the willingness of the national governments and international organisations to put support mechanisms in place to help achieve its goal of reducing carbon emissions.

Nuclear power has become more important. The UK government said nuclear will play a key role in helping them meet their EU targets. They also stated that the new plants will be built without any subsidy from the government. However because nuclear is generated from uranium, there is a dangerous potential of the spent fuel to pose a threat for a millennia. It is noteworthy that the Chinese have apparently built two giant nuclear reactors and are experimenting with thorium which gives a much safer end product. If this proves successful, it could see a switch to ore materials containing thorium. Robert Houston wrote an interesting paper on the examination of the Nuclear Non- Proliferation Treaty (NPT) in the context of the sale of Australian uranium to India and China . The NPT has been controversial and divisive since it was established in 1967. Whilst the treaty has been successful in limiting the proliferation of nuclear weapons there have been criticisms that the core bargain at the heart of the treaty is discriminatory and inherently unsustainable. This paper analyses the treaty in the context of its application to India and specifically the sale of Australian uranium to India and China. Australia has historically refused to supply uranium to any state outside the NPT regime but this policy has recently been the subject of debate, particularly in light of the Indo-US Nuclear Deal under which the US will supply nuclear material and technology to India. The paper will examine whether it is manifestly unfair for Australia to supply uranium to a country such as China and not India for the sole reason that China is within the NPT regime or whether the extraordinary nature of nuclear politics justifies steadfast adherence to the NPT regime. It will also consider the status of the NPT and examine whether it has become an end in itself rather than a means to ensuring nuclear security and non-proliferation.

Extreme care must be taken in devising methods of safe disposal using leak proof storage conditions. The “Chernobyl Accident” has scared a lot of nations from the possibility of using nuclear power. The different compensation systems under nuclear liability conventions were examined by Anthony Adisanya. Balancing the protection of the liable operator (economic interest) and the protection of victims (public interest) was a herculean task that the drafters of liability conventions had to contend with. Initially, it started in favour of the nuclear industry, i.e. preferring economic interest to public interest. Later on, it started shifting towards and in

favour of public interest over economic interest. This shift was common amongst the various liability regimes. However, these liability regimes do not have common mechanisms which link them all together. As economic interests are being dropped in favour of public interest, it is expected that one international harmonized liability regime would be best alternative to the present ailing liability regime systems.

Energy and environment are playing an increasingly central role in China-U.S. relations. China and the U.S. are two of the largest and most powerful nations in terms of population, territory, military, and economics. The U.S. is the largest national economy, and China is the second largest. They account for the two highest volumes of international trade and they are the top two producers and consumers of energy. They are also the top two GHG emitters. Recently, gas has emerged from behind the scenes in the United States to the point where analysts often refer, due to advances in the extraction of “unconventional” sources, to as a “game changer”. The profile of gas is also rising as a way to reduce dependence upon Middle East oil and because of its relatively low level of pollutants, including carbon dioxide (CO2), compared with other fossil fuels, although it is composed primarily of methane -- the most potent greenhouse gas (GHG). Erwin Rose examines how current trends in the natural gas industry affect China–U.S. energy relations. He outlines recent developments in both markets and analyses how they might affect the bilateral dynamics. He submits that increased gas production and consumption in both countries may reduce domestic and global demand for coal and oil, and therefore reduce some of the economic volatility, political tension, and environmental degradation associated with the other hydrocarbons. The author concludes that current trends in both countries offer an array of mutual benefits that are likely to increase energy security in China and the U.S., reduce bilateral political friction, and foster enhanced cooperation.

As the oil price fluctuates, demand for oil decreases and increases accordingly. But a record high oil price can reduce demand drastically. Ngoc Le investigates the issue of demand destruction, for the case of 30 OECD countries. Based on an analysis of Oil demand data, the author submits that there is evidence of oil demand destruction in one third of OECD countries, and also submits that analysis for past

decades also implies that further demand destruction in the future will mostly rely on technological improvements in transport sector, rather than on oil substitution in the power sector. The author proffers recommendations for policy makers to reduce oil consumption and import dependence through a gradual subsidy removal and stronger support for renewable fuels and appropriate tax on domestic vehicles

Decommissioning of offshore installations remains an important topic. Will states be allowed to remove these platforms partially or fully and what legislation do states have in place to ensure compliance with regulations. Sima Ajam explores decommissioning in the UKNS. The author examines and analyses the key provisions of the UK Petroleum Act 1998 that deal with liability for decommissioning of offshore oil and gas installations, and their effects on oil and gas investment activity in the UKNS. It will find that, as with most developed countries that operate under concession-based regimes, the UK Government has ensured that oil companies are not only financially responsible for decommissioning of offshore installations but are also able meet their obligations from an environmental, social and technical aspect. Unfortunately, the legal requirements placed on oil companies have had some wider (adverse) implications on their appetite for continued investment in the region. Indeed, in February 2008 Oil & Gas UK conducted a survey which showed that investment in developing new oil and gas reserves in the UNKS offshore fell to just under £5bn in 2007 – a real-term drop of around £1bn, which is said to have been attributed in the main to exposure to high decommissioning costs. The conclusion drawn is that the Government has managed to put into place a robust legislative and regulatory framework that adheres to the standards set by international law and manages to protect the interests of individual tax payers. However, it now has to find a way to balance the substantial burden placed on oil companies to meet decommissioning costs (in particular the security requirements) with incentives that generate and maintain investment in the UKNS.

Gaining sustainable competitive advantage remains very difficult. For a company to succeed, the company has to gain a competitive advantage that differentiates it from its other competitors. The diamond industry is considered in a case study and the paper evaluates how the industry creates this niche for itself. Nkiruka

Maduekwe analyses the diamond industry from a global point of view. The diamond industry is global in nature. Its supply chain pipeline moves from one country to the other and thus making it impossible to analyse the industry from a regional or local angle, as so doing will fail to give the true picture. As an industry whose product derives its value from the perception of its consumers, what is the feasibility for the players in the industry to gain sustainable competitive advantage? Using Industry analysis tools created by Michael Porter, Prahalad & Hamel, this paper examines the five forces together with the macro-environment factors. The report finds and recommends that the implementation of the tools by a player in its analysis of the diamond industry would ensure the Sustainable competitive advantage it seeks.

The importance of team work cannot be over emphasised. An optimal team is a successful team. Of particular interest in this context is the Creation of an optimal team using Belbin's Team Role Self Perception Inventory. The Belbin team roles are a vital starting point for devising a strategy to improve the overall effectiveness of a team. A carefully selected and balanced team will deal with complex issues faster, and outperform unbalanced teams and/or individuals. This paper by Olayinka Obagun highlights the strengths of using the Belbin model and the various weaknesses that the model suffers from.

Arbitration has grown to be the preferred mode of the resolution of commercial disputes all over the world. The strong attachment to this mode of dispute resolution is because of the inherent benefits derived from using the system. The proceedings are conducted in private and therefore shield vital commercial information from being leaked to the public or parties that are outside the transaction. This places a measure of confidentiality on such information that is vital for the continued existence and survival of a commercial venture. The ability to keep information about arbitral proceedings confidential, is therefore regarded as one the most important benefits of arbitration. Anthony Ekpete in his paper focuses on the scope, application and limitation of the doctrine of confidentiality in arbitration. He observes that the principle of confidentiality which is central to arbitral proceedings is however, not absolute. He argues that it is in fact, an implied obligation arising from the commercial nature of the contract between the parties

and its exercise has been subjected to several limitations. Against the backdrop of the development of international arbitration in the petroleum sector, Marcia Ashong discusses the challenges faced by non-signatories to international arbitration agreements, but who are nevertheless affected by arbitral awards, and suggests a way forward amidst the realities of the arbitration process. Nkaepe Etteh focuses on how inconsistent decisions arise in international investment arbitration (IVA) and how they can be avoided. In her view, consistency in IVA awards can be best achieved by establishing a system of precedent in conjunction with the establishment of an appellate body. The appellate body would be necessary to confer the requisite legitimacy on a precedent. The author submits that consistency is not as important in International Commercial Arbitration because of its private nature. She adds, however, that some level of consistency and predictability can be achieved by utilizing the consolidation mechanism in proceedings involving the same parties and relating to the same contract. Rudiger Tscherning in his paper undertakes an interesting discourse on the ongoing dispute between Vattenfall AB and the Federal Republic of Germany, before an ICSID tribunal, arising from the environmental regulation of a coal-fired power plant project. The author seeks to ascertain, when a host State's valid, non-compensable environmental regulation of investor's property constitute compensable expropriation due to that measure having an effect tantamount to expropriation. He submits that the dispute is a further indication that as regulation of carbon-intensive investments intensifies, primarily as a result of Host States' climate change mitigation measures, investors will not desist from pursuing investment arbitration to protect their investments. He further argues that as future disputes between investors and Host States are inevitable, there are trends emerging whereby Host States are examining options to regain part of their regulatory independence.

The cultural idiosyncrasies of countries visibly come to play in the sphere of International Business Negotiations. Ndapwilapo Shimutwikeni explores the impact of culture in international negotiations with special reference to China and United States of America. The author points out that the hidden elements of culture influences on negotiations, if not understood, can make or break an international business transaction. She evaluates the cultural differences between China and

USA applying the ten ways that culture can affect negotiations as espoused by Salacuse, a leading expert in negotiations, as a benchmark. He posits that adequate knowledge of these differences will enable negotiators understand the negotiation behavior of their counterparts with a view to making negotiations proceed with more ease.

Indigenous peoples (IP) are increasingly being recognized in natural resource projects globally and the rights of participation that have accrued from this recognition have been enshrined in a number of international legal instruments. Agreements between IP and mining companies seeking to access land over which IP have rights are also common place now. However, the basis under which these agreements are made varies greatly and is often dependent on the relative bargaining position of the particular indigenous group impacted by the resource extraction project. IP have argued strongly that to promote self-determination, it is necessary to have the right of free, prior and informed consent before projects which will impact on their property rights are undertaken. However, there has been reluctance by governments and mining companies to cede a right of veto over projects to indigenous people which has led to a duty to consult in good faith being more widely accepted around the world. The differing points of views were evident in the development of the World Bank Safeguard Policy as recommended by the Extractive Industries Group which was subsequently adopted by the IFC and the Equator Principles. The reluctance to embrace the standard of Free, Prior and Informed Consent can also be seen domestically in Australia and Canada where indigenous people are entitled to be consulted and to a right to negotiate. Robert Houston in his paper examines whether Agreements negotiated under the free, prior and informed consultation standards required by the World Bank and the Equator Principles give mining companies an appropriate social license to operate. He observes a current shift away from a strict right of FPIC towards a softer, more procedural standard of Free, Prior and Informed Consultation (FPICons) as applied by the World Bank (WB) Safeguards. In his paper, Adebola Ogunlade underscores the place of the International Labour Organisation (ILO) 169 Convention as a panacea to IP rights violations in the midst of oil exploitation, specifically in oil-rich Nigeria. Against the background of the apparent inadequacy of existing

transnational instruments (as ratified by Nigeria), he evaluates the ILO 169 and the need for its ratification and domestication into Nigerian law. Whilst he posits that the ratification and domestication of ILO 169 is not a be all, end all in the pursuit of IP rights protection in petroleum exploitation in Nigeria, he suggests that in addition, several other measures need to be taken on the part of all stakeholders to assure IPs that their rights will be guaranteed in the course of, and after petroleum activities have been undertaken in their territories.

**Conclusion:**

It is easy to see from this broad selection of papers that the balance is changing quickly. The excessive reliance of fossil fuels and its increased importance is slowly diminishing. The advent of gas from shale using hydraulic fracturing has started leading the silent revolution. Whether or not oil runs out, companies want to ensure they have a more secure form of energy and will not experience any disruptions or high oil prices. Renewables will not close the gap as quickly as it was originally envisaged due to high investment costs and potential supply disruptions. A range of various forms of energy including but not limited to nuclear, gas from shale, wind energy, solar panels, oil, gas and coal(and carbon capture and storage if successfully deployed commercially) will produce a diversified mix and ensure a state can guarantee security of supply. Teamwork in the EU is compulsory as the desire for a single internal energy market will require some co-operation from all member states. Everything can be converted to energy as the citizens of New Zealand have demonstrated by using human excreta for energy. Environmental concerns for all forms of energy remain and a balance must be struck as the climate change threat is real and imminent.

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