What is the state of Corporate Sustainability in the Western Canadian oil & gas industry and how can junior and intermediate producers improve it?

HZ University of Applied Sciences

Patrick Alexander
Student ID: 62464
Supervisor: Ingrid de Vries
BBA – International Business and Management
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What is the state of Corporate Sustainability in the Western Canadian oil & gas industry and how can junior and intermediate producers improve it?

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Patrick Alexander

Supervisor: Ingrid de Vries

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Preface

This bachelor thesis was written by Patrick Alexander, as part of the graduation assignment for CU06793 to obtain the Bachelor of Business Administration designation. The research was carried out whilst working for Sunesis, a boutique accounting and consulting firm, in Calgary, Canada. Aim of this research is to provide an overview of what Corporate Sustainability is, how well junior and intermediate oil & gas companies in Western Canada conduct it and how they can improve on their current efforts.

At the beginning of this writing process was the challenge of finding a suitable research question because there are so many things worth writing about in this world. But after sitting down with my in-company supervisor and founder of Sunesis, Lori Caltagirone, it became clear to me that I wanted to write about Corporate Sustainability in the oil & gas industry. Therefore my first word of thanks goes out to her and the leadership she has provided over the past months and for connecting me to various industry professionals who I could interview for this thesis.

I also want to thank the four interviewees who took time out of their busy day to answer some of my sustainability-related questions. Namely, Ricardo Cosentino, Heather Douglas, Gary Leach and Suzanne West. Your insights and opinions were of great help to me and I appreciate all your comments and suggestions.

Last but not least I want to thank Ingrid de Vries, my supervisor at the HZ University of Applied Sciences, for being always available if I had questions or concerns. Your extensive feedback and suggestions have helped me a lot in the process.
Abstract

When the United Nations World Commission on Environment and Development (WCED) issued the often quoted Brundtland report in 1987, which first coined the term 'sustainable development', they inspired a multitude of sustainability related ideas and concepts. One of them is the idea of 'Corporate Sustainability'.

This bachelor thesis sets out to examine what Corporate Sustainability is and explores to what extent it is manifested in the junior and intermediate oil & gas companies in Western Canada. First, it will begin exploring what the state of current research on Corporate Sustainability is and which differences and similarities it has to other concepts such as the 'triple bottom line' or 'Corporate Social Responsibility'. Secondly, a brief overview will be given of the Western Canadian oil & gas industry to set the context for the later analysis which is centered around junior and intermediate companies in that sector. The thesis will then end in recommendations on what these companies can improve to become more sustainable corporations.

The outcome of the research is that Corporate Sustainability is mainly split into three dimension, a social, an environmental and an economic one. This is significant because many companies only focus on their economic performance whereas NGO's mostly focus on the environmental performance and many people from the younger generation care about having a good workplace that not only appreciates them but also gives back to the community. Therefore, to be a truly sustainable corporation all three aspects have to be taken into account. To determine how sustainable a corporation is, it will be evaluated with the Sustainability Phase Model and financial data from annual their audited annual financial statements.

In addition to that, the ‘Social License to operate’ concept will be examined for its relevancy to the oil & gas industry. The social license to operate is a rather new term which was created in the late 1990s and was targeted towards resource development companies in the oil & gas, mining, precious metal and forestry industry who have their main operations in the developing world. The reason why this term gained in popularity is because many people believe there is a discrepancy between the legal license these companies obtain from the appropriate authorities and the way they conduct business. This is particularly relevant in Western Canada as many stakeholders, such as First Nations, oppose oil & gas infrastructure projects such as new pipeline construction.

Apart from these social aspects, companies often realize that there are many climate related opportunities and threats to their operations. Therefore this research paper will list some of the most important risks and opportunities in this regard and state how juniors and
intermediates are coping with them. Interestingly to note here is that oftentimes a risk is also identified as an opportunity, if the company manages to stay ahead of its competition, for example when the emission reporting obligations change and the corporation already does more than what was required of them. Most industry professionals interviewed for this research agreed that these reporting requirements will only get stricter over time.

After applying this concept to junior and intermediate oil & gas companies in Western Canada it is found that they are on a path to becoming sustainable organizations in the social dimension of the Corporate Sustainability model. However, they are only considered to be compliant in terms of their environmental performance and need to become more environmentally friendly to be considered sustainable corporations. Recommendations to improve their environmental performance include, but are not limited to, capturing flare gas and use it to power equipment, trim down land disturbance, reduce overall GHG emissions and participate in emission trading schemes. By implementing these steps companies can find better and environmentally friendlier ways to extract resources also move beyond the compliance phase and towards becoming a more efficient and sustainable corporation. But for now it can be said that junior and intermediate oil & gas companies are not headed towards becoming sustainable corporations.
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>Bbl</td>
<td>Barrel</td>
</tr>
<tr>
<td>Boe/d</td>
<td>Barrel of oil equivalent per day</td>
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<tr>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
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<tr>
<td>DJSI</td>
<td>Dow Jones Sustainability Index</td>
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<td>EPAC</td>
<td>The Explorers and Producers Association of Canada</td>
</tr>
<tr>
<td>ES</td>
<td>Environmental Sustainability</td>
</tr>
<tr>
<td>ESG</td>
<td>Environmental, Social and Corporate Governance</td>
</tr>
<tr>
<td>G&amp;A</td>
<td>General and Admin</td>
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<tr>
<td>GHG</td>
<td>Greenhouse Gas</td>
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<td>GRI</td>
<td>Global Reporting Initiative</td>
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<tr>
<td>HS</td>
<td>Human Sustainability</td>
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<tr>
<td>LNG</td>
<td>Liquefied Natural Gas</td>
</tr>
<tr>
<td>Mcf</td>
<td>Million Cubic Feet</td>
</tr>
<tr>
<td>MMBtu</td>
<td>Million British Thermal Units</td>
</tr>
<tr>
<td>NGL</td>
<td>Natural Gas Liquids</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<tr>
<td>NPRI</td>
<td>National Pollutant Release Inventory</td>
</tr>
<tr>
<td>SOE</td>
<td>State-owned enterprise</td>
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<tr>
<td>WCED</td>
<td>United Nations World Commission on Environment and Development</td>
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<tr>
<td>WCS</td>
<td>Western Canadian Select (oil benchmark)</td>
</tr>
<tr>
<td>WCSB</td>
<td>Western Canadian Sedimentary Basin</td>
</tr>
<tr>
<td>WTI</td>
<td>West Texas Intermediate (oil benchmark)</td>
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1. Introduction

Sunesis Consulting Inc., following called ‘Sunesis’ or ‘the company’, is a boutique accounting firm that specializes in internal control evaluation, internal audit and enterprise risk management for Canadian energy companies. The main reason why Sunesis was founded was due to a change in US legislation in 2002, when the Sarbanes-Oxley act (SOX) was implemented. Before SOX, many companies such as Enron or Worldcom committed accounting fraud through many organizational levels because there were no internal controls in place to prevent them (Fass, 2003). Companies could cash their checks anywhere, operate without the necessary segregation of duties or send money to numbered bank accounts abroad without raising any red flags. However, the Sarbanes-Oxley act changed that by making, among other things, internal controls and audits for publically listed companies mandatory. Soon thereafter Canada implemented its own version of SOX which is called Bill C-198 or CSOX (Pourian, 2009).

As with every new law that brings significant change to the previous system it also offered a great opportunity for Lori Caltagirone, the founder and CEO of Sunesis, who had an intimate knowledge of the accounting processes that had to be adapted to comply with this new regulation. She was very dissatisfied by the products of the Big 4 Accounting Firms (KPMG, EY, PWC and Deloitte) and believed she could provide a better service for companies who have to comply with this new regulation. For that reason, she decided to start her own business and do compliance work for some of Calgary’s most prominent junior and intermediate oil & gas companies. In this definition junior means a production of up to 10,000 barrels of oil equivalent per day (boe/d) and intermediate between 10,000 boe/d and 200,000 boe/d.

The company grew organically from there over the past 10 years and now has a very solid client base of over a dozen junior and intermediate oil & gas companies in Calgary. However, compliance services seem to become more and more commoditized and the services offered by the bigger accounting firms are improving in quality and therefore it becomes more difficult for Sunesis to differentiate themselves from the competition.

1.1 Purpose of this Research

To maintain Sunesis’ competitive advantage it is crucial to not only stay up-to-date with current regulations but also with industry trends that could trigger new regulations in the future and have significant impact on their clients. One of these industry trends is the sustainability movement across the globe that already had significant impact on the business environment today and is likely to increase in importance over time. There are certain risks associated with this trend towards sustainability for all of Sunesis’ clients since they are all
connected to the oil & gas industry, whose primary purpose is to extract non-renewable resources out of the ground and generate shareholder value (Tetzlaff, McLean, & Chong, 2012). But as with every challenge, there is also opportunity. It is a chance for these companies to practice strategic sustainability which takes into account the longevity of the organization, the environment and the human capabilities (Benn, Dunphy, & Griffiths, Organizational Change for Corporate Sustainability, 2014). It is also an opportunity for Sunesis to further expand its advisory services to cover elements of Corporate Sustainability which is not in their repertoire at the moment.

1.2 Research Problem
The problem, in a nutshell, is that the business model of oil & gas companies is dependent on a limited non-renewable resource and therefore each company has a limited life span based on the amount of recoverable barrels of oil equivalent (boe) they have. However, with the rise of unconventional extraction methods such as horizontal drilling and hydraulic fracturing, the amount of oil & gas that can be recovered is on the rise again (The Economist, 2014) and a growing number of publicly listed Canadian companies are exploration and production companies or other suppliers and vendors of the oil & gas sector (Hussain, 2013). A change in regulation or a slump in oil & gas prices due to less demand or too much supply has a significant impact on the Canadian business environment since they are heavily reliant on the resource industry as seen with the recent downturn in late 2014.

Another big risk for exploration and pipeline companies alike is the opposition they face in moving forward big infrastructure projects, such as the Keystone XL pipeline, the Northern Gateway pipeline or the Energy East pipeline. This opposition is largely driven by concerns about the environment and the fear that such an operation has a negative impact on the land of farmers or First Nations and the environment in general. Therefore one of the challenges is how to make these companies more sustainable in economic, social and environmental terms to maintain the so called ‘social license’ to operate. The social license to operate is a fairly new concept that is usually not formally or tangibly written out but rather refers to whether or not a company or its project is accepted in a certain area (Yates & Horvath, 2013). This is very important for oil & gas companies since their operations are generally in remote or rural areas and often face resistance by local residents who fear that they are the ones bearing the majority of the environmental cost associated with oil & gas development. This fear is valid because if there is a dispute between the titleholder and a company who wants to use the land, then the Canadian government will in most cases favor the corporation over the titleholder (Plourde & Whittingham, 2012).
1.3 Research Objective and Purpose
The research objective is to apply current theory on Corporate Sustainability to the sustainability related challenges junior and intermediate oil & gas companies in Western Canada face.

The purpose of this research is to provide relevant information and insights to the managers of Sunesis that will aid them in their decision making when identifying future risks for their clients and eventually help Sunesis to expand their advisory services beyond compliance activities.

1.4 Research Question
What is the state of Corporate Sustainability in the Western Canadian oil & gas industry and how can junior and intermediate producers improve it?

1.5 Sub Questions
1. How does current theory define Corporate Sustainability?
2. What are junior and intermediate oil & gas companies?
3. What are the major risks junior and intermediate oil & gas companies are facing?
4. Which sustainability initiatives and measures have junior and intermediate oil & gas companies already taken?
5. To what extent is the “social license to operate” relevant for junior and intermediate oil & gas companies?
2. Theoretical Framework

To achieve the highest possible degree in objectivity and integrity in this research it is necessary to use a variety of different sources of information, such as books, scientific articles, journal articles and conversations with experts. But since many experts could potentially be biased towards their industry it will be proceeded with caution when referencing these experts as a source and explicitly state what that person’s position is to avoid any confusion.

For the research part about the Western Canadian Oil & Gas Industry some information will be drawn from Brian Mills Iradesso, a leading communication and research firm that is specialized in the Energy Industry (Brian Mills Iradesso, 2014), because they provide a large amount of relevant data. For further information and benchmarking, research done by the Alberta Energy Regulator (AER), the National Energy Board (NEB), and independent researchers will be taken into consideration. In addition to these publications there will also be information from mandatory documents that each publically listed Canadian Energy company has to file such as the Annual Information Form (AIF), Management, Discussion & Analysis (MD&A), Quarterly and Annual Reports as well as investor presentations. This should suffice to give the reader an overview of the oil & gas industry.

Furthermore, benchmarking reports from other professional advisory firms will be taken into account such as the one written by Tetzlaff, McLean and Chong on behalf of PwC about the Western Canadian Oil & Gas Industry (Tetzlaff, McLean, & Chong, 2012).

The two main sources of information which also cover the main part of my thesis are two books; “Organizational Change for Corporate Sustainability” (2014) written by Suzanne Benn, Dexter Dunphy and Andrew Griffiths as well as “Making Sustainability Work (2014) by Marc J. Epstein and Adriana Rejc Buhovac. Both books are often cited by researchers and regarded as great tools to explore Corporate Sustainability concepts, measurements and implementations. Apart from describing what Corporate Sustainability is and how it adds value, this book centres on the “Sustainability Phase Model” (Benn, Dunphy, & Griffiths, 2014), which describes the different phases organizations go through to become sustainable. It is also a tool used to benchmark different organizations and even industries to one another in terms of their capability to be sustainable. According to the authors, most organizations are not sustainable therefore have to change in order to become sustainable. The authors also outline different ways to achieve that, one of them is through creating structures that foster strategic sustainability, which will be called organizational design in this report. They also put a strong focus on change management and whether incremental or transformational change is the best option (Benn, Dunphy, & Griffiths, 2014). Respectively the “Corporate Sustainability Model” from Epstein and Buhovac is focused on enhancing a
company’s lasting profitability and provides a multitude of ways corporations can achieve that. It also focuses on the benefits of Corporate Sustainability.

2.1 Scope and Limitations of research

This research project is conducted within pre-established confined boundaries and has several limitations to it, which are outlined in the paragraphs below.

First of all, some of the literature that is reviewed for this thesis is not explicitly about the Western Canadian oil & gas industry, but rather about the oil & gas industry in general or about the mining industry which has similar effects on the environment and local communities. In these cases, it will be stated what the nature of the original article is and determined whether or not it still proves relevant to the overall theme of the research. Other times, it is about the oil & gas industry in Canada which is predominately in the Western part of the country and can therefore be assumed to be directly applicable to the research.

The scientific research that is available specifically to junior and intermediate oil & gas companies is very limited and therefore the majority of information will come from interviewing experts in the energy industry, industry publications and publically disclosed information released by these companies or relevant third parties. One of the sources used in this aspect is from the Carbon Disclosure Project (CDP) who work with many companies across various industries to gather and analyse data about climate change, resource efficiency and their supply chain programs among other things. Their data is used by some of the largest investors in the world, who manage a combined wealth of well over US$90 trillion, to determine the long-term climate-related risks (Carbon Disclosure Project, 2014).

As it will be described in the literature review later on, the term ‘Corporate Sustainability’ is often interpreted or named differently by researchers and thus has no clear definition that is universally accepted. For the purpose of this research, Corporate Sustainability will be defined as being economic, social and environmentally sustainable in the context of a for-profit organization. Other researches use the terms ‘Strategic Sustainability’, ‘Organizational Sustainability’, ‘The Triple Bottom Line’, ‘Corporate Responsibility’ or other to describe the same idea. That is, that a corporation has to have this before mentioned trifecta of economic, social and environmental sustainability in order to become a sustainable corporation.

The arguably most controversial term in this research paper that is put on the same level as Corporate Sustainability is ‘Strategic Sustainability’ because it can be associated with Michael Porter’s and Mark Kramer’s ‘Shared Value’ model due to the fact that Porter and Kramer argue in an Harvard Business Review article that corporations can achieve a competitive advantage by differentiating themselves through responding to societal needs.
When they respond to these needs, they are able to help society in general as well as their own interests which is a step up from what businesses are doing now, which is mostly serving their shareholders. They claim therefore that if corporations focus on this shared value between society and corporations then they can achieve a competitive advantage that is more sustainable than the standard differentiation strategies such as cost leadership (Porter & Kramer, 2011). Therefore the sustainability aspect of shared value focuses on the competitive advantage a company has and not on their environmental, social and economic sustainability practices. John Elkington, who coined the term “triple bottom line”, says that while shared value is a great improvement on current management theories it is also threatening to replace discussions around sustainability. He criticises the concept of shared value in regards to sustainability as it does not take the environmental capital a corporation might deplete into account and therefore limit future development which is a crucial aspect of any sustainability theory (Elkington, 2012). Mark Kramer responded to that article from Elkington by stating some areas of sustainability do not benefit the corporation’s competitive advantage and are therefore not part of the shared value theory (Kramer, 2012). Due to this emphasis on the economic aspect of Corporate Sustainability through the competitive advantage of a corporation and the potential disregard of environmental issues this concept will not be chosen for this research paper. However, strategic sustainability as it is defined by Benn, Dunphy and Griffiths (2014) defines strategic sustainability as a mixture between the corporation’s longevity, it’s environmental impact and its social initiatives and therefore will be used for this research (Benn, Dunphy, & Griffiths, 2014).

A more extensive review and definition of this concept will be described in the literature review.
3. Research Design and Methodology

This chapter outlines the approach and methodology used for this research and gives an understanding of the way the research was designed, the data collected and analyzed as well as ethical considerations that are applicable to this research.

3.1 Research Methods

This bachelor thesis research can be classified as a combination of desk research and explorative research with descriptive elements. Multiple types of research are used since the main goal is to determine what Corporate Sustainability is in current theory and then apply it to junior and intermediate producers in the Western Canadian oil & gas industry. Desk research is used to determine what Corporate Sustainability is by means of analysing previously conducted research in that field and then extract the similarities and differences for this dissertation.

Exploratory research with descriptive elements is used to apply this theory to the oil & gas industry by interviewing various experts on that topic (exploratory) as well as benchmarking (descriptive) multiple company responses to sustainability related questions provided by third parties.

For the theoretical part of this research secondary data from books, scientific articles, periodicals and appropriate websites are gathered. Qualitative data is collected through structured interviews with open questions. The goals of these interviews is to find out what a variety of industry professionals think about Corporate Sustainability for junior and intermediate oil & gas companies and the risks they face. The following four industry professionals are interviewed for this research paper and the interview reports can be found in Appendix 5.

Suzanne West, President & CEO of Imaginea Energy, a junior oil & gas company that focuses on the triple bottom line

Gary Leach, President of the Explorers and Producers Association of Canada (EPAC), an industry group representing junior and intermediate oil & gas companies

Heather Douglas, former Vice President of Communications & External Affairs for Athabasca Oil Corporation, a junior oil & gas company

Ricardo Cosentino, Senior Manager at Sunesis, a boutique accounting and consulting firm

The main part of the analysis will be conducted by means of analysing publically disclosed data of the following seven junior and intermediate oil & gas companies:

Arc Resources
Baytex Energy
Bonavista Energy
Crescent Point Energy
Enerplus
Pengrowth Energy
Vermillion Energy

This sample has been selected because these companies provide an extensive and detailed amount of data through their filing with the Carbon Disclosure Project (CDP)\(^1\) that allows for analysis of the environmental dimension of their Corporate Sustainability performance. In total, three elements of each category will be analyzed according to the breakdown in Appendix 1. For the Economic aspect their Corporate Governance ranking will be analyzed as suggested by the Dow Jones Sustainability Index (DJSI)\(^2\), their economic performance as per the Global Reporting Initiative (GRI)\(^3\) and their differentiated product on environmental performance as per Bansal (2005). These indicators were chosen because they represent a broad spectrum of economic indicators and have publically available information.

Social sustainability will be evaluated with publically available information in regards to labour practices, community investment as well as health and safety processes. A combination of these indicators is listed by all four parties in Appendix 1.

The environmental aspect will be measured with information from the CDP about a company’s climate strategy (DJSI), emissions (GRI) and what incentives are provided to improve environmental performance.

The research is designed to be relevant for practice, as it will contribute to understanding the risks oil & gas companies face as well as to be part of the foundation for future advisory offerings by Sunesis Consulting. All the quantifiable collected data will be analyzed and visualized through graphs and tables to make it easier for the reader to understand the subject matter.

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1 The CDP is an organization that works together with many institutional investors and multinational companies to preserve the natural environment and tackle climate change related issues. They are doing this by collecting information about a company’s GHG emissions, their risks and opportunities from climate change and other non-financial information on behalf of the investors. With this information they are working together with investors to convince high-pollution companies to reduce their emissions as part of a cost-reduction effort. Furthermore they also provide carbon management support services and benchmarking reports to companies.

2 The DJSI was established in 1999 and is therefore the oldest sustainability benchmark that is still being used. Its main purpose is to assess the sustainability of the world’s largest corporations by evaluating their economic, environmental and social performance.

3 The GRI is a standardization organization that provides guidelines and frameworks for sustainability reporting. These standards apply to corporations, NGO’s and governmental entities and it is being used by thousands of organizations worldwide, which makes it one of the most widely used standards.
3.2 Literature Review

The main focus of this research is to understand the state of Corporate Sustainability in the Western Canadian oil & gas industry and how it can be improved. There is a broad body of scientific literature available on the topic of Corporate Sustainability, or similar terms such as the 'triple bottom line', and most scholars agree that there are three dimensions to it. Namely an economic, a social and an environmental dimension. A smaller amount has been written about the Western Canadian oil & gas industry, in particular with focus on junior and intermediate oil & gas companies. However, there are many other non-scientific publications on this topic. Therefore the theoretical framework for this research paper is based on data from books, journal articles, industry publications, websites and interviews with industry experts. A potential shortcoming of this framework is getting biased by industry publications or interviews with industry insiders as well as by general findings and opinions of other researchers on this topic.

3.3 Ethical Issues

The author will keep any personal or professional information given to him in regards to this research confidential unless consent by the individual or organization is obtained to publish their names. Plagiarism will not be tolerated and will be mitigated through adequate referencing. Furthermore, the scientific credibility of this research was secured through using multiple adequate and credible sources and avoiding assumptions of concepts.
4 Theoretical Framework

The aim of this chapter is to outline the concepts and theories that will be dealt with in this research and highlight what the state of current theory on these topics is at the moment. For that reason the concept of ‘Corporate Sustainability’ as well as the concept of the ‘Social License to Operate’ will be reviewed through current literature. Additionally, a brief overview will be given of the Western Canadian oil & gas industry, including industry-specific terminology. This will provide the foundation for further analysis and discussion to determine what the current state of Corporate Sustainability for junior and intermediate oil & gas companies is as well as give recommendations on how they can improve it and how a firm like Sunesis can aid them.

4.1 Corporate Sustainability

There are various definitions of the term ‘Corporate Sustainability’, with the earliest one dating back to 1987 when the United Nations World Commission on Environment and Development (WCED) issued the often quoted Brundtland report which termed ‘sustainable development’ as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). With that definition, the commission also established the foundation for future theories and definitions around Corporate Sustainability because it took the lasting effects of corporate actions into account. Nonetheless, it took almost one decade until this concept filtered through to common executive publications (Gladwin, Kennelly, & Krause, 1995) and another decade for the first efforts to integrate it into the day-to-day operations of a business (Bansal, 2005). Although this concept gained in popularity in recent years, there is still no unified definition of Corporate Sustainability (Montiel & Delgado-Ceballos, 2014).

Many researchers argue that sustainable development is a key part of Corporate Sustainability, as evidenced by many references to the Brundtland report, because it centers on the belief that corporations should contribute to the common objective of making our world more environmentally, socially and economically sustainable (Montiel & Delgado-Ceballos, 2014) (Wilson, 2003). But it is not the only defining factor of Corporate Sustainability which also lends from other organizational ideas, such as “Corporate Social Responsibility”, “Stakeholder Theory” and “Corporate Accountability Theory”, which all add to the overall definition of Corporate Sustainability (Wilson, 2003). Some also argue that Corporate Sustainability is a key component in creating long-term shareholder value and therefore should be viewed as ‘Strategic Sustainability (Benn, Dunphy, & Griffiths, 2014).
Most scholars agree that, even though there are other dimensions and influences to it, Corporate Sustainability has three main aspects, which are economic, social and environmental (Hart & Milstein, 2003) (Epstein & Buhovac, 2014) (Benn, Dunphy, & Griffiths, 2014). But they often use different terms to describe them. John Elkington for example coined the term “Triple Bottom Line” to describe this concept in 1994 that refers to the “3Ps” which are: people, planet and profit (Elkington, 1994). Contrary to the notion whereas economic aspects of Corporate Sustainability are usually associated with profits (Elkington, 1994), other researches are using the longevity of a company as a measurement for economic success because it shows that they value long-term thinking, conduct financial prudence and are able to adapt to new trends (de Geus, 1997) (Benn, Dunphy, & Griffiths, 2014).

Despite some technical differences, the consensus among many researchers is that Corporate Sustainability rests on the three pillars of economic, social and environmental factors and therefore this research paper will refer to it like this as well. Additionally, the concepts of longevity will be taken into account when assessing economic factors due to the compelling case Benn, Dunphy and Griffiths make for its relevance and importance to Corporate Sustainability.

Because there is no universal definition of Corporate Sustainability, there is also no clear approach on how to measure it, and, perhaps more importantly, which weight each aspect of it should carry. Nevertheless, Ivan Montiel and Javier Delgado-Ceballos compiled a list of studies (Appendix 1) that benchmark ways to measure Corporate Sustainability exclusively in the three pillars that were identified earlier (Montiel & Delgado-Ceballos, 2014). This table includes two sources from independent researchers and two from public entities. The independent sources are from Pratima Bansal (Bansal, 2005) who created a set of over twenty items by which Corporate Sustainability can be measured and the other one is from an international research team that analyzed these concepts from a Chinese perspective (Kolk, Hong, & van Dolen, 2010). The publically available data comes from the Dow Jones Sustainability Index (DJSI) and the Global Reporting Initiative (GRI) which can be freely obtained on their respective websites.

These measurement approaches, especially the GRI approach, are becoming increasingly popular across industries, almost 7,000 organizations created voluntary sustainability reports with this framework (Global Reporting Initiative, 2014).

4.2 Western Canadian Oil & gas Industry
The Western Canadian Oil & gas Industry is largely defined by the Western Canadian Sedimentary Basin (WCSB), sometimes also referred to as Western Canada Sedimentary
Basin, because it contains one of the biggest reserves of oil & gas worldwide (Schneider, Stelfox, Boutin, & Wasel, 2003). Within the WCSB, there are several different plays such as the Bakken, the Montney, the Alberta Deep Basin, the Viking Formation and the Duvernay, to name the most important ones. A more detailed listing as well as their position within the WCSB can be found in Appendix 2. The term play is used to describe oil or gas fields that are in an area with similar geological characteristics such as the density or porosity of rocks (Stoneley, 1995). Because these pools can be in different depths they seem to be overlapping each other on the map shown in Appendix 2.

As shown on the map below, the WCSB covers almost the entire province of Alberta, parts of Northeastern British Columbia as well as Southern Saskatchewan and Manitoba on the Northern end of the Williston Basin.

![Map of Western Canadian Sedimentary Basin](image-url)

*Figure 1: Western Canadian Sedimentary Basin (cropped to show mostly Canada) retrieved from (Canadian Society for Unconventional Resources, 2012), p.6.*
Oil & gas extraction has a long tradition in these regions, especially in Alberta where gas was first discovered in 1883 and oil in 1914 (Alberta Energy Regulator, 2014). However, commercial production of gas did not start until the 1930s, while oil production did not take off until 1947 with the discovery of oil in Leduc, Alberta (Alberta Energy Regulator, 2014). From that point onwards, conventional light oil production surged in Western Canada and peaked 26 years later in 1973 at about 1.5 million boe/d, before it declined to just over half a million boe/d in 2009 (National Energy Board, 2011). At the same time, production from the oilsands in Alberta has increased steadily and even exceeded conventional light oil production in 2002 (National Energy Board, 2011). The graph below shows a fast increase in oil production from the WCSB, particularly of conventional light oil since the oil discovery in Leduc and the slow decline until 2007. However, production of conventional heavy oil increased steadily until it peaked in the late 1990s and oil sands crude is still increasing and has superseded conventional production as the main source of oil.

![Figure 2: WCSB Production, retrieved from (National Energy Board, 2011) p. 3](image)

These four decades of declining conventional production have been reversed by the emergence of multi-stage hydraulic fracturing and horizontal drilling techniques that allow producers to tap into oil & gas reservoirs from dense rock formations such as shale that have previously not been accessible as shown in Figure 3. Though this illustration is very simplified, it shows that the recoverable oil reserves below the surface drastically increased once oil & gas from shale became recoverable through horizontal drilling and hydraulic fracturing. This trend has led to a new importance of junior and intermediate oil & gas companies because they are the ones who initially started the shale boom by focusing on getting oil out of the ground that has previously deemed unrecoverable.
4.2.1 Junior and Intermediate oil & gas companies

There are various definitions of the term junior and intermediate oil & gas company, with the most common focusing on the size of their production. This research paper will use the guidelines from Brian Mills Iradesso, a communication and research firm that is specialized in the Energy industry. They define junior oil & gas companies as companies whose production, on average, is between 500 boe/d and 10,000 boe/d per quarter. Companies that produce less than 500 boe/d are considered to be emerging oil & gas companies and will not be considered for this research (Brian Mills Iradesso, 2014).

Likewise, intermediate oil & gas companies are defined by producing, on average, between 10,000 boe/d and 200,000 boe/d per quarter (Brian Mills Iradesso, 2014). All companies that produce more than this are considered to be major oil & gas companies and will also not be considered for this research either, because they fall outside the targeted customer spectrum of Sunesis.

4.3 Social License to operate

The social license to operate is a rather new term which was created in the late 1990s and was targeted towards resource development companies in the oil & gas, mining, precious metal and forestry industry who have their main operations in the developing world. The reason why this term, ‘social license’, gained in popularity is because many people believe
there is a discrepancy between the legal license these companies obtain from the appropriate authorities and the way they conduct business. Several stakeholders such as people in the local communities, aboriginal groups and several non-governmental Organizations (NGO's) are alarmed about the effect these corporations have on the natural surroundings as well as the exploitation of the local workforce. Therefore the term ‘social license to operate’ started to gain traction and numerous companies realized that in order to maintain the right to extract resources they would have to take concerns such as labor conditions and environmental impact into account (Soyka, 2012).

Brian F. Yates, Director of Environment at SNC Lavalin, one of the world’s largest engineering companies and Celesa L. Horvath, Principal Consultant at Ventus Development Services state in their working paper ‘Social License to Operate: How to get it, and how to keep it’ which was released for the Pacific Energy Summit 2013, that even though this concept can’t be formalized as it is not assigned by a governing body it still can be achieved through conscious efforts by corporations revolving around consultation with stakeholders and moral and accountable conduct (Yates & Horvath, 2013). They acknowledge that obtaining a social license to operate is especially crucial in industries that are dependent on the extraction of natural resources, such as the oil & gas industry because it is a vital addition to their risk management tool. The authors also argue that when organizations do more than what is required of them from a legal perspective they foster a lasting relationship with key individuals in that area which leads to a higher level of trust and recognition (Yates & Horvath, 2013).

Today, most international extractions companies have guidelines in place to address concerns about the environment and labor conditions before potential issues arise, especially with very complex projects that have a large impact on the ecosystem. Many in the industry realize the importance of the social license because it addresses real problems and fears of people that are impacted by the development of resources and maintaining a level of trust through the social license also enables companies to work in places else not possible and therefore it has a profound impact on the revenue generating capability of any company operating in this type of industry (Soyka, 2012).
5. Analysis

This chapter analyses the different risks junior and intermediate oil & gas companies face, the Corporate Sustainability of the selected sample and what they can improve upon to become more sustainable corporations. It also analyses the information gathered from the interviews and how they fit into the findings as well as an analysis of the most common opportunities and threads in regards to climate change.

5.1 Common Risks for Juniors and Intermediates

Research done about Western Canada’s junior and intermediate oil & gas companies on behalf of global accounting firm PwC found that there is no to little difference in the risk profiles of junior and intermediate oil & gas companies and that they identify on average 48 risks which are continuously examined (Tetzlaff, McLean, & Chong, 2012). Some of the risks will be explored in greater detail in the following paragraphs.

Access to Capital

Industry experts such as Gary Leach, the president of the Explorers and Producers Association of Canada (EPAC), an industry group representing junior and intermediate oil and gas companies in Western Canada, mentions that the single biggest risk, apart from current volatility and depressed prices for crude oil and natural gas, is how to attract and retain the support of capital market investors, especially for smaller companies. Junior and intermediate producers are more reliant on equity markets to fund capital investment programs while large producers can generally fund their capital programs from existing cash flow or debt. Their main challenge is to be profitable in Canada’s high-cost environment due to high labor expenses and costly drilling techniques such as horizontal drilling and hydraulic fracturing that are more capital intensive than conventional production methods. Additionally, they also receive some of the lowest oil prices in the world which adds to the challenge (Leach, November 2014).

Leach is certainly not alone with this perception. Suzanne West, the CEO of Imaginea Energy, a junior oil & gas company with operations in Western Canada also mentions that the biggest risk, especially juniors are facing is the access to capital and the cost of it (West, December 2014). However, this is only indirectly supported by research which found that only one quarter of junior and intermediate oil & gas companies in Western Canada had trouble getting access to capital but the ones who reported this to be an issue were mainly juniors (Tetzlaff, McLean, & Chong, 2012). Accordingly, if that is the biggest risk these companies face then it is mitigated by the majority of junior and intermediate companies.

Nonetheless, remaining competitive as an investment destination is a risk that the whole Canadian oil & gas industry is facing, in particular since the price per barrel of oil dropped by
almost 50% from June to December. This is particularly bad for Canadian producers who produces mainly heavy oil because the Canadian benchmark, Western Canadian Select (WCS), sold for almost $19 less per barrel than the American benchmark, West Texas Intermediate (WTI), throughout the year 2014. The price difference is mainly due to higher sulfur content in the oil and therefore a higher cost of refining it into end products such as gasoline (Tuttle & Doan, 2014).

Graph 1 below illustrates the steady decline of Brent Crude Oil, the international oil price benchmark, WTI and Natural Gas spot price at the Henry Hub in Louisiana until the beginning of December 2014. As the figure shows, starting in late June oil prices started to decline significantly while gas prices have declined less but fluctuated a lot more during the year. The spikes in natural gas prices in February and March were due to an extremely cold winter across North America.

![Graph 1: Commodity Prices, retrieved from (Crowe, 2014)](image)

**Price Volatility and Liquefied Natural Gas**

Ricardo Cosentino, Senior Manager at Sunesis Consulting, who has over a decade of experience in evaluating and mitigating risks of oil & gas companies argues that the single biggest risk they face is the price volatility of oil and natural gas (Cosentino, December 2014). His claim is supported by the recent downturn in commodity prices that caused many companies to cut their capital spending forecast in late 2014. In total, nearly $60 billion in capital investments have been delayed in the Canadian oil & gas industry until 2018 (Hussain, 2015). While this significant downturn also contains projects by bigger companies
that operate in the oilsands, it is also indicative of the smaller producers who substantially reduced their 2015 capital budgets.

This risk could be partially mitigated if Canadian producers would get more access to international markets, especially oversea markets such as Asia and Europe because their products will receive higher prices in these jurisdictions due to the limited local supply. The current lack of market access outside North America and the political uncertainty of proposed pipelines and LNG terminals constitutes another important risk which also negatively impacts the willingness of investors to support this sector according to Gary Leach (Leach, November 2014).

Graph 2 below shows how much the price of natural gas has changed in Asia, the European Union and the U.S. In this example the price of natural gas in the U.S. is indicative of the Canadian price because they are both in the common North American market and therefore their rates usually differ very little. The y-axis represents the price of natural gas in U.S. dollars per million metric British thermal units (MMBtu) and the x-axis represents the time from 1999 until 2014. Prices are more than six times as high in Asia and almost quadrupled in the European Union over the past 15 years, but they have actually stayed at the same level in North America even though they fluctuated heavily in that period.

![Graph 2: Gas prices, retrieved from: https://imfdirect.files.wordpress.com/2014/10/natural-gas-chart.jpg](https://imfdirect.files.wordpress.com/2014/10/natural-gas-chart.jpg)
This stark discrepancy between North American and International prices has sparked several proposals for Liquefied Natural Gas (LNG) export terminals from the west coast of British Columbia to fetch higher prices abroad. According to the website of the government of British Columbia there are 18 proposed LNG projects on Canada’s West Coast as of early December 2014. The provincial government hopes to have three export facilities up and running within the next six years (British Columbia, 2014).

In order to transport gas safely and efficiently to oversea markets it has to be turned into its liquid form by super-cooling it to minus 160 degree Celsius. When the gas is in its liquid state it also has only a fraction of its volume left, around 1/600th compared to its gas state, which allows transporters to ship large quantities of it abroad. Once the LNG reached its destination at a LNG import facility, it can be transformed back to its previous state through a process that is called regasification and then transported to end-users through normal pipelines (Ministry of Natural Gas Development, 2014).

Many of the gas-weighted junior and intermediate oil & gas companies with landholdings in the gas-rich Montney formation in Northern British Columbia such as Painted Pony Petroleum Ltd. and Tourmaline Oil Corporation mention in their corporate presentations that these recent LNG developments are big opportunities for them and will have significant impact on their bottom line as they are able to receive higher gas prices abroad. Painted Pony Petroleum also argues that one of the key advantages for Canadian producers for LNG export is the relatively short transportation route to Japan and Canada’s cold climate that reduces the cost of super-cooling natural gas to its liquid state (Tourmaline Oil Corp., 2014) (Painted Pony Petroleum Ltd., 2014).

This opportunity is not only recognized by Canadian producers but also by many foreign companies such as PetroChina, Shell, BP Group, China National Offshore Oil Corporation (CNOOC) and others (Ministry of Natural Gas Development, 2014). One of the biggest proponents of LNG export terminals is Petronas, a Malaysian State Owned Enterprise (SOE) who bought Progress Energy Resources Corp. in June 2012 for C$4.8 billion to establish itself as one of the top producers and prospective exporters of natural gas to Asian markets (Polson, 2012).

However, due to strong opposition, especially towards pipelines that would carry the necessary gas to the coast, from First Nations and environmental NGO’s in British Columbia the provincial government reassessed the costs and benefits of such projects. This entails that projects are now also evaluated on their environmental impact (Stephenson & Shaw, 2013). Adding to the challenge is the further development of LNG terminals in other parts of the world and Petronas decision to indefinitely defer whether or not it will move forward with
its proposed export facility (Weng Hoong, 2014). Conversely, the federal government still has the ability to override a rejection by the province or by the National Energy Board in favor of LNG terminals (Stephenson & Shaw, 2013).

Furthermore, TransCanada’s proposed ‘Coastal GasLink’ pipeline is already being challenged by First Nation’s as they fear that the approval process has been rushed, their title rights not appropriately evaluated and that the environmental assessment has been conducted poorly (Jang, 2014). Other projects such as the Northern Gateway and Trans Mountain pipelines are also being challenged in court by First Nations and NGO’s alike as they fear that these developments could have a potentially negative impact on the local and global environment. All these pipelines would deliver oil & gas for export to Canada’s west coast, in particular to the deep water harbour in Kitimat.

One pipeline project that has been halted due to environmental concerns, since it could disturb Beluga whale habitat is TransCanada’s Energy East pipeline (Lewis, 2014). Something similar could happen to the westward running pipelines as the west coast has also large breeding grounds, especially for humpback whales. The chances for this to happen are a bit smaller tough because the Canadian government delisted them from the “threatened” species list shortly before they had to decide whether to approve the pipeline or not. Therefore it is more difficult for First Nations and NGO’s alike to appeal this decision in court (Gordon, 2014).

Other Risks
Heather Douglas, former Vice President of Communications & External Affairs for Athabasca Oil Corporation also identified the ability of a company to find good reserves as a major risk. She stated that environmental or social risks are usually not on the radar of smaller producers because they focus all their energy and capital on finding and developing good resources and grow shareholder value. However, she also acknowledges that once these companies reach a certain size they will become more focused on the impact they are having and especially the reputation they have because they need to attract human capital and many prospective employees, especially from the younger generation, often place great value on the social and environmental impact companies have. Therefore many growing organizations will change the view on their operation and become more involved in the community through donations and implement other Corporate Social Responsibility (CSR) initiatives to accommodate a growing amount of stakeholders that are crucial to the longevity of the company. In this case the stakeholders are future employees (Douglas, November 2014).
Other risks, according to the global consulting and accounting firm Ernst & Young (EY), who conducted a global survey amongst oil & gas executives, about the risks oil & gas companies face are ‘Health, safety & environmental risks’ as well as ‘Climate change concerns’. Other risks include but are not limited to the fact that oil discoveries are harder to find because most conventional plays have been exhausted and existing ones are harder to access due to governmental controls, access to technology and lack of capable workers as well as instability in commodity prices (Ernst & Young, 2013).

5.2 Environmental Risks and Opportunities

Opportunities and risks in regards to climate change are identified by all companies and are summarized in the following table:

<table>
<thead>
<tr>
<th>Change in regulation</th>
<th>Opportunities</th>
<th>Risks</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>• Emission reporting obligations (5)</td>
<td>• Emission reporting obligations (7)</td>
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<tr>
<td></td>
<td>• Carbon taxes (4)</td>
<td>• Uncertainty surrounding new regulations (6)</td>
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<tr>
<td></td>
<td>• Voluntary agreements (3)</td>
<td>• Carbon Taxes (6)</td>
</tr>
<tr>
<td></td>
<td>• Cap and trade schemes (3)</td>
<td>• Cap and trade schemes (4)</td>
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<tr>
<td></td>
<td>• Product efficiency regulations and standards (2)</td>
<td>• Product efficiency regulations and standards (2)</td>
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<tr>
<td></td>
<td>• Fuel / energy taxes and regulations (2)</td>
<td>• International Agreements</td>
</tr>
<tr>
<td></td>
<td>• General environmental regulations, including planning</td>
<td>• Air pollution limits</td>
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<tr>
<td></td>
<td>• Air pollution limits</td>
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</tr>
<tr>
<td></td>
<td>• Other regulatory drivers</td>
<td></td>
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<td></td>
<td>• International agreements</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Change in physical climate parameters</th>
<th>Opportunities</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Changes in temperature extremes</td>
<td>• Change in precipitation extremes and droughts (5)</td>
</tr>
<tr>
<td></td>
<td>• Change in mean (average) temperature</td>
<td>• Change in mean (average) temperature (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tropical cyclones, hurricanes and typhoons (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Change in temperature extremes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sea level rise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Other physical climate drivers</td>
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<table>
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<tr>
<th>Changes in other climate-related developments</th>
<th>Opportunities</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Reputation (5)</td>
<td>• Reputation (7)</td>
</tr>
<tr>
<td></td>
<td>• Changing consumer behaviour</td>
<td>• Changing consumer behaviour (5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Uncertainty in social drivers</td>
</tr>
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Table 1: Opportunities and Threats of changes in the environment

The number in brackets represents how many out of these seven companies listed this change as a risk or an opportunity to their future operations.

Change in Regulation

Interestingly, in the first category ‘Change in regulation’ all seven firms reported ‘Emission reporting obligations’ as a risk while at the same time the majority of these companies also reported this as being an opportunity. The reason for that is that changes to emission
reporting obligations can be negative as well as positive. Negative in the case of British Columbia where the provincial government aims to intensify the reporting process for oil & gas companies in respect to GHG emission which got cited by all companies that have operations in the gas-rich Montney formation. Another major risk driver in this regard is the proposed GHG reduction scheme in the province of Saskatchewan to reduce the overall emissions released within the province. Environment Canada, the environmental department of the Canadian government, is currently also reviewing the reporting requirements under the National Pollutant Release Inventory (NPRI) that exempts oil & gas companies which use hydraulic fracturing from reporting the release of potential harmful substances. If the NPRI gets changed to include reporting of emissions of different types of enhanced oil recovery, which is expected to be complete some time in 2015, then companies who engage in hydraulic fracturing will face significantly higher reporting costs. All of these changes discussed in this paragraph would result in higher operating or G&A costs due to more reporting obligations and implementation of new measurement systems.

On the upside, a change in regulations is also identified as an opportunity by five companies who cite that the stricter reporting requirements on GHG helped them identify areas where they could cut costs by reducing energy usage and wastage or by implementing a new data management system. Almost the same is true for ‘Carbon taxes’ as an opportunity where companies’ cite that these levies have aided them in becoming more efficient by using less energy or replace older machinery with more resourceful ones that consume less fuel. Evidently, on the risk side of the carbon tax is the higher initial cost to do business in areas where a carbon tax is charged which leads to higher operational costs and reduced profitability. This risk was also cited by six companies along with the ‘Uncertainty surrounding new regulations’ which mainly focused on potential higher carbon taxes, new emission standards and reduced value for existing plays.

Asked about the likelihood of increasing environmental regulations over oil & gas extraction in the next five years Gary Leach and Suzanne West were both stating that the environmental pressure is constantly increasing and that regulation will follow incrementally (Leach, November 2014) (West, December 2014). Whereas Heather Douglas argues that Canada already has some of the most stringent regulations in the world and does not expect them to become tougher in the coming years (Douglas, November 2014). Ricardo Cosentino on the other hand reasons that stricter environmental regulation should be applied at the consumer level to decrease the demand and that this will drive prices down and with it new drilling, as is happening at the moment. He therefore does not expect changes in environmental regulation for producers but says that they still will be indirectly impacted by changes in regulation for consumers (Cosentino, December 2014).
Change in Physical Climate Parameters

In the ‘Change in physical climate parameters’ category, companies identified substantially more risks than opportunities. Enerplus and Vermilion Energy were the only two companies who each identified one opportunity with a change in physical climate parameters. Vermilion Energy stated that a change in mean temperature could potentially lead to higher energy demand for heating or cooling houses and Enerplus listed that a change in temperature extremes has the potential to disrupt international energy trading which would lead to higher demand and therefore an increased price for Enerplus’ North American production. Despite these two examples the overwhelming majority of responses were related to risks with the most common being ‘Change in precipitation extremes and droughts’. The main reason for that is that floods could damage operations and droughts would limit the water supply that is needed for many oil recovery methods such as hydraulic fracturing or water flooding.

Second to that, companies cited ‘Change in mean (average) temperature’ as a risk to their operations because much of the drilling locations in Western Canada are covered in ice over the winter months and require frozen streets to access. Winter is therefore the busiest drilling season for many companies in the Western Canadian oil & gas industry. Most rural municipalities also prohibit companies from moving heavy equipment like drilling rigs during the spring in what is called ‘spring break-up’ when the ground slowly thaws and becomes too wet to operate in. If the temperature rises in the future, as is commonly expected by most scientists, due to the increased GHG emissions worldwide, then the access times for these areas is briefer than before which in turn raises their costs per well and decreases their revenue due to the lower drilling cycles.

Changes in other climate-related developments

The ‘Changes in other climate-related developments’ category shows a similar picture as the first category about changes in regulation where the most mentioned risk is the same as the most mentioned opportunity. In this case, each company named ‘Reputation’ as a risk for other climate-related developments and five companies identified it as an opportunity. This ambivalence is explained by and tied in with the social license to operate that most companies mention. If they manage the land they have leased or their operations in general poorly, then this will cause landowners or other relevant stakeholders such as investors to put pressure on the company that could result in losing their social license to operate. That could happen for example through litigation by the landowners if there was a spill on site or, in extreme cases, by acts of vandalism or terrorism against property of the company. Oh the other hand, companies cite reputation as an opportunity to maintain their social license to operate by educating land owners and being recognized by the public as being one of the best places to work for.
'Changing consumer behaviour’ was also mentioned as a risk by almost all companies, because consumers become more aware of climate change and adjust their purchasing behaviour towards more sustainable or “green” products. For example, many consumers are now buying more fuel efficient cars, improving the insulation of their houses to decrease energy usage or switching to alternative power providers that are using mainly renewable energy rather than gas for generating electricity. However, some firms acknowledge this trend but argue that it is being offset by the internationally rising demand for oil & gas. Pengrowth Energy, who is the only company that cites this change as an opportunity as well, states that there could be an increase in the demand for natural gas as a means to generate electricity because its carbon footprint is less than that of coal.

5.3 Analysing Corporate Sustainability
Gary Leach argues that junior and intermediate oil & gas companies are usually built to be sold (driven by the objective to provide a return of capital to investors) and that their main focus is on getting a competitive investment return for their investors. Therefore corporate sustainability is not the main topic of conversations they are having. Especially because most of them are sold within ten years, the longevity aspect of Corporate Sustainability is not applicable to these companies. Still, due to the tough regulations in Western Canada surrounding resource extraction, oil and gas producers place a high priority on minimizing their environmental impact to comply with the law (Leach, November 2014).

5.4 Evaluating Corporate Sustainability performance
Evaluating Corporate Sustainability, through all of its different dimensions according to the guidelines from Appendix 1, is not feasible for this research project because most of the required information is not publically accessible or even confidential because it contains sensible business data such as their cost of input or their customer relationship management. Having these restrictions in mind, Corporate Sustainability will be analyzed exclusively with publically available information that best measures Corporate Sustainability with the tools from Appendix 1.

Therefore the economic dimension will be assessed through their most recent financial results, their Corporate Governance ranking and weather their main products are differentiated on environmental performance. The social dimensions will be the most difficult to assess with only publically available information because there is no unified measurement and a high amount of judgment is required to determine best practices. A strong emphasis is placed in this category on various workforce engagement activities, such as talent attraction and retention strategies and employee engagement, as well as health and safety issues. For that reason the workplace will be assessed with publically available information in the form of national employment ratings and health and safety ratings. Lastly, the environmental
dimension will be evaluated with the most current reports from the Carbon Disclosure Project (CDP) on climate change, which provide an extensive overview of a company’s environmental impact (Carbon Disclosure Project, 2014). This report was also chosen because of the significance it has due to their collaboration with some of the world’s biggest investors. CDP aids them in identifying potential risks across their range of investments which is combined at almost US$ 90 trillion (Benn, Dunphy, & Griffiths, 2014).

Due to the limited availability of crucial information only a sample size of seven companies can be chosen because this is how many companies submitted a report to the CDP. The same companies will also be evaluated for all other dimensions for comparison purposes. Furthermore each company mentioned on their individual websites that they are committed to Corporate Sustainability.

5.5 Economic aspects of Corporate Sustainability?

As mentioned before, the economic part will be evaluated by using a set of economic indicators. Firstly, financial performance will be analyzed with the profitability ratio of the company. Due to the different prices oil & gas companies receive for their commodities there cannot be a fair comparison on a boe/d basis, because oil-weighted companies have received much higher prices than their gas-weighted peers in recent years. Therefore, industry typical measurements such as ‘Operating netback per boe’ or ‘Capital Expenditure per boe’ will not be used for this research. Only the profitability ratio will be taken into account as this is one of the most crucial measurement for economic success, especially in the oil & gas industry because it shows that a company can operate profitable and generate shareholder value. All the information needed to conduct a profitability analysis is retrieved from the audited annual financial statements of the respective company. The data in chart 3 shows the accumulated profitability of each company over the past three years, which was retrieved from their audited annual financial statements and table 2 depicts the real numbers.
Chart 3: Profitability Analysis

<table>
<thead>
<tr>
<th></th>
<th>Net Income ($ millions)</th>
<th>Revenue ($ millions)</th>
<th>Profit ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC Resources</td>
<td>666.9</td>
<td>3813.8</td>
<td>17.49%</td>
</tr>
<tr>
<td>Baytex Energy</td>
<td>640.9</td>
<td>2373.5</td>
<td>27.00%</td>
</tr>
<tr>
<td>Bonavista Energy</td>
<td>250.9</td>
<td>2430.7</td>
<td>10.32%</td>
</tr>
<tr>
<td>Crescent Point Energy</td>
<td>536.7</td>
<td>6749.4</td>
<td>7.95%</td>
</tr>
<tr>
<td>Enerplus</td>
<td>-160</td>
<td>3647.3</td>
<td>-4.39%</td>
</tr>
<tr>
<td>Pengrowth Energy</td>
<td>-219.7</td>
<td>3634.8</td>
<td>-6.04%</td>
</tr>
<tr>
<td>Vermilion Energy</td>
<td>739.8</td>
<td>3214.2</td>
<td>23.02%</td>
</tr>
</tbody>
</table>

Table 2: Profitability Analysis

It shows that Vermillion Energy and Baytex Energy are the most profitable companies, while Pengrowth Energy and Enerplus are the least profitable companies of this sample and even lost money over the past three years.

Secondly, the corporate governance rating will be evaluated as it is one of the measurements of the DJSI. Having good corporate governance is crucial for all corporations, as it ensures oversight and accountability within the corporation and limits fraudulent activities. It also helps a company to operate efficiently by assigning clear responsibilities and controls. Therefore it is an important measurement for the economic performance.

To evaluate it, the ‘Board Games 2014’ report released by the Globe and Mail, a major Canadian newspaper, will be used. This is the most extensive corporate governance evaluation in Canada and includes roughly 250 publically traded companies from different
industries. The score is broken down by ‘Board Composition’ (32%), ‘Shareholding and Compensation’ (28%), ‘Shareholder rights’ (28%) and ‘Disclosure’ (12%) (Globe and Mail, 2014). In this report, Pengrowth Energy and Vermilion Energy perform the best from this sample and shares the 20th rank while Bonavista fared the worst at rank 207 and all other companies are within the top 100. Appendix 3 shows a more detailed breakdown of each category, which also shows areas of weakness.

Last but not least, Bansal’s measurement of economic performance will be evaluated by means of determining whether a company has differentiated its products based on environmental performance or not. This is part of the economic evaluation because it shows that a company has been willing to do a transformational change towards sustainability and that they have taken non-financial costs of production into account as well. However, none of the companies in this sample have differentiated their products on environmental performance. In fact, they only produce commodities such as oil, natural gas or NGL’s and are therefore not differentiated in any way.

To sum up, some of the selected companies fair better than others in terms of profitability and corporate governance, but none of them have differentiated their products based on environmental performance. There is also no identifiable correlation between profitability and corporate governance, as Pengrowth Energy is the best performing company in terms of governance but the worst in profitability and Vermillion Energy is tied for first place in corporate governance and is the second most profitable company in this sample.

5.6 Social aspects of Corporate Sustainability?

The social component of Corporate Sustainability is predominantly focused on competencies within and management of the workforce (Benn, Dunphy, & Griffiths, 2014) as well as giving back to the community (Bansal, 2005). Therefore the best way to assess this dimension is through analysing which, if any, HR related awards a company has won and in what community projects a company has helped fund. All the selected companies have their headquarters in Calgary, Alberta and therefore the ‘Alberta’s Top Employers’ rating will be used. The criteria to be one of the 65 top employers in Alberta are the following (Alberta’s Top Employers, 2014):

1. Physical Workplace
2. Work Atmosphere & Social
3. Health, Financial & Family Benefits
4. Vacation & Time Off
5. Employee Communications
6. Performance Management
7. Training & Skills Development
8. Community Involvement
Only two companies have won this award in the past eight years. Bonavista Energy has won it in 2012 and 2013 and Pengrowth has won it in 2014 as the only intermediate oil & gas company in that year (Alberta's Top Employers, 2014). The reason why only these two companies are on this list could be because they simply did not apply to be considered or are too small to offer the benefits that some bigger companies are able to offer.

Unfortunately, there is not more publicly available information that is verified by third parties about this aspect of Corporate Sustainability. However, this dimension seems to be important to many companies because they all dedicate large parts of their website to informing the general public about why they should work for them. Therefore the corporate websites will also be taken into account to analyse the human sustainability dimension even though it is not the most trustworthy source of information as companies will always try and present themselves in the best light possible with their own communication channels.

After analysing their websites, it is found that each company proclaims that they are committed to community projects by charitable giving, especially in the remote locations where the majority of their operations are. Additionally they all emphasize that they offer continuing education, a great corporate culture and generally try to set themselves apart by showing how committed they are to their employees.

5.7 Environmental aspects of Corporate Sustainability?
To assess the environmental impacts and disclosures around, reports provided by the CDP will be used due to the fact that they offer an extensive amount of information about emissions, climate strategy and motivations to improve overall environmental performance. These reports are based of the CDP's 2014 Climate Change Information Request, which asked companies across multiple industries a standardized and an industry specific set of questions to assess their environmental disclosure and performance (Carbon Disclosure Project, 2014). Companies are not required to respond to this request and the majority of companies in the oil & gas exploration & production industry did either decline or not respond to the questionnaire from CDP. (Carbon Disclosure Project, 2014). Of those companies in that sector who did respond, only seven are junior and intermediate companies from the Western Canadian oil & gas industry. An overview of their responses to the questionnaire is summarized in Appendix 4.

On the basis of these findings, the CDP also rates the overall disclosure score of the respective companies by assigning values to each question that has to be answered. Values can differ significantly from question to question, depending how crucial the information is for the overall assessment and how much documentation is required of the organization. The disclosure score is then calculated by dividing the amount of points an organization has
achieved with the amount of points that are possible and then multiplied by 100 in order to achieve a ratio that is comparable across companies and industries. In order to be assessed and assigned a performance score by the CDP, a company has to have a disclosure score of at least 50, otherwise there is not enough data to do an analysis. The performance is assessed by evaluating the answers and data given in the questionnaire and then changed into a percentage, like with the disclosure score. To illustrate their findings better and adapt them to other rating standards, these percentages are converted into groups and graded with a letters with an ‘A’ representing the best score achievable (Carbon Disclosure Project, 2014).

All the information from the following paragraphs in this chapter can be retrieved from the Investor CDP 2014 Information Requests of the respective companies. The main findings of these reports (Appendix 4) are that five out of seven companies have established a set of incentives to manage climate change issues that include specific targets. Just Crescent Point Energy and Baytex Energy did not offer any incentives. Targets for managing climate change are mostly centered on reducing GHG emissions and minimize Government Reportable Incidents. To achieve these targets all companies cited either monetary rewards or internal as well as external recognition as incentives. In most cases the monetary incentives are attainable for all employees. Only ARC Resources and Enerplus offers monetary incentives exclusively to the managers who are in charge of improving environmental performance. However, non-monetary incentives in the form of recognition is achievable for all employees in each company.

Despite these different approaches in incentivising their managers and employees, all companies stated that climate change is integrated into their overall business strategy. As the main reason for that, each company cites growing awareness of climate change as a risk to their operations by key stakeholders and gaining a competitive advantage through reducing emissions and thereby often costs.

Although each company recognizes GHG emission reduction as a potential competitive advantage only two companies, ARC Resources and Baytex Energy, have absolute targets and intensity targets for reducing their emissions. Bonavista Energy and Pengrowth Energy have solely intensity targets to reduce emissions on a per unit basis whereas Vermilion Energy has only an absolute target in place for their Australian business unit but none for their Canadian business unit. Crescent Point Energy and Enerplus have no targets in place. Even with these efforts, all companies, apart from Enerplus, report that their global emissions increased over the previous year. None of them does a scenario analysis based on a low-carbon future.
5.8 Measuring Corporate Sustainability
After having identified the major risks juniors and intermediates face and what their current position on Corporate Sustainability is, it is time to evaluate what can be approved upon. To do this, Benn, Dunphy and Griffiths (2014) sustainability phase model will be used. First, a corporation’s response to Corporate Sustainability is split into six phases which are listed in the next paragraph. Once identified where the companies are on that model, their research indicates different paths towards becoming more sustainable which will be highlighted in the following paragraphs.

5.9 The Sustainability Phase Model
The sustainability phase model is used to evaluate and benchmark the dedication of companies towards the social and economic aspects of Corporate Sustainability. It allows movement between the different phases in both directions and even to skip phases if there has been a substantial change in the company, for example a new executive has been hired or an activist investor who wants to change the strategic direction of the company. The six phases identified are the following: (Benn, Dunphy, & Griffiths, 2014).

1. Rejection
In this phase a company simply rejects the idea of operating in a sustainable fashion and is mainly focused on short-term profits while disregarding the environment. Employees are generally viewed as costs that can easily be interchanged.

2. Non-responsiveness
The main differentiation in this phase over the previous one is that there is no operational resistance towards sustainability but it is rather disregarded as not necessary

3. Compliance
The Compliance phase represents a significant step up as companies in this phase describe themselves as a “decent employer and corporate citizen” who also give back to the community through donations. They also avoid environmental abuses out of fear of lawsuits and public opposition against their organization which could lead to getting their social license to operate revoked. All in all, companies in this phase are very risk averse and are mainly compliant to get better access to capital and establish themselves as a “good corporate citizen”.

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4. **Efficiency**

Companies who are in this phase are often taking the initiative in implementing sustainability measurements if they can decrease costs or boast productivity. This can be done by investing into, for example, energy-saving technology. Oftentimes these companies also start to recycle or even resell waste from their production to third parties. They also find many efficiencies in their human resource function by establishing company-wide guidelines and offering financial and non-financial benefits to their employees. Furthermore, they experience less staff turnover and are generally more efficient in their operations.

5. **Strategic Proactivity**

In this phase, companies are very fixated on innovation which is at the centre of the business. They also view sustainability as very important to their overall strategy and they aspire to become recognized as one of the companies with the best Corporate Sustainability. That helps them achieve continuing economic success by attracting the best people and often get an “employer of choice” or similar award. As companies in the previous phase focused on reduction or repurposing of physical waste, companies in this phase try to avoid wasting time and opportunities such as entering new markets. Additionally, they also focus on products or services which are new, superior and ecologically harmless.

6. **The Sustaining Corporation**

A corporation which reaches this level is an industry leader that vigorously advocates for sustainable business practices and works together with its vendors and customers to ensure that each step of the process is truly sustainable. It will also redefine the meaning of waste once more which is now considered as everything that distracts the company from its objective of being sustainable.

As mentioned in the introduction of this chapter, these phases deal with the environmental and social aspects of Corporate Sustainability and therefore a company can be on two different phases for these two dimensions (Benn, Dunphy, & Griffiths, 2014). For example, Bonavista Energy prides itself as being a great place to work that fosters teamwork and giving back to the community (Bonavista Energy, 2014) and they have been recognized as such by receiving multiple awards for it. Therefore they would be rated in phase five, strategic proactivity, for the social component but only in the third phase, compliance, on the environmental dimension as they comply with the applicable laws and integrate climate related risks into their multi-disciplinary companywide risk management process as evidenced in Appendix 4. But they do not use it to improve efficiencies as evidenced by their CDP score of D and the amount of gas they flare and vent.
Graph 3 below illustrates that Bonavista Energy would fall within the ‘People-concerned corporation’ section of the sustainability matrix. Each number represents the phase as described earlier. All other companies of this sample will also fall into the same quadrant as all of them fulfill the compliance requirements of Environmental Sustainability (ES).

But none of these goes beyond compliance and actively seeks to implement sustainability related efficiency measures or even did a scenario analysis for a low-carbon future. Nonetheless, they all fulfill the requirements to be at least considered for the efficiency phase of Human Sustainability (HS) because each of them gives back to the community and values their employees as stated in the chapter 5.6.
5.10 Improving Corporate Sustainability

Having identified that the companies in this sample are in the third quadrant of the sustainability matrix, the next step now is to move them into the fourth quadrant of being a sustainable corporation. Since they just have to move one field to the right in order to become a regarded as a sustainable corporation an incremental path is recommended (Benn, Dunphy, & Griffiths, 2014). For them to move from Compliance into the Efficiency or Strategic Proactivity phase of ES a series of steps is recommended which include, but are not limited to starting experimental projects to capture the excess gas that is often generated by oil exploration and then either flared or vented into the atmosphere, monitor its progress and, if successful, implement it across the organization. Some of them could also group together and build strategic alliances with the quest of reducing GHG emissions and limit the use of water for fracking operations. To do that, companies have to invest a significant amount of capital which requires commitment and leadership by senior executives.

One company that is trying to become a sustainable corporation is Imaginea Energy, a junior oil & gas producer headquartered in Calgary with operations in Western Canada. They are the first company in the oil patch who are focused on the triple bottom line, hence on Corporate Sustainability. Suzanne West, the founder and CEO, argues during the interview, that most of her peers consider CSR or sustainability in general as something that is outside of their business and that they are only focusing on it because some stakeholders are concerned about it. She claims that once you fully integrate the concept of sustainability into the business, especially if it is an oil & gas company, you can find many better and environmentally friendlier ways to extract these resources (West, December 2014). Since Imaginea is still a new company, it was founded in late 2013, and fairly small, there has not much been made public about their sustainability progress. However, while interviewing her she stated that many of the changes that have been done so far are quite small such as implementing recycling programs, avoid paper as much as possible and do most things electronically or stop idling trucks in the field if it is not necessary. Another sustainability measures Imaginea undertakes is to mostly buy old assets that have sufficient infrastructure and already disturbed land with the aim of minimizing the direct environmental impact their operations have (West, December 2014).

All these things are indicative of the culture at Imaginea Energy which aims at innovating the whole industry. One of the techniques they are working on at the moment is how to capture flare gas at one oil well and turn it into propane to power the electricity generators. This technology, if it will be successful, would not only eliminate flaring or venting of excess gas but also would make driving large amounts of propane or other fuel to remote drilling sites obsolete. Furthermore, they are also collaborating with local utility companies and purchase
power generated by renewables and offer them to use their already disturbed land to set up wind turbines or solar panels to reduce cost and minimize environmental impact (West, December 2014).
6. Discussion

The approach chosen for this research is not ideal but still valid because it offers insights into the state of Corporate Sustainability within the Western Canadian oil & gas industry. It is not ideal though because of the relatively small sample size of seven companies and the limited availability of information on aspects of human sustainability. The selected sample is likely to be industry leading as they went through the effort to provide an extensive amount of information to the CDP. Furthermore, environmental sustainability can never be fully achieved by an oil & gas company which relies on resources that are limited by nature and therefore the terminology used to describe them as sustainable organizations can be misleading. Nonetheless, there are many ways for these companies to improve their environmental performance and the researcher strongly believes that a Corporate Sustainability program will aid companies to do so.

By interviewing industry experts it was found, that environmental, and with it reputational risks, have still a rather low importance for junior and intermediate oil & gas companies compared to the high price volatility of commodities and access to capital. But the analysis showed that some companies become increasingly aware of the risks and opportunities climate changes brings with it as evidenced by their response to the CDP. And contrary to the risk of depressed commodity prices, companies are actually able to address some of these environmental risks by proactively engaging in emission reporting, emission capturing and technology to reduce emissions. As climate-related reporting becomes ever more popular in the investment community, a company can position itself as the more sustainable choice among its peers when taking sustainability into account.

The aim of this research has been partially accomplished because the analysis has been somewhat biased, as will be explained in the following chapter. But the author is confident about the findings and the potential impact they could have on the sustainability of junior and intermediate companies operating in the Western Canadian oil & gas industry. The Corporate Sustainability Phase Model has proven to be a valuable tool to assess a company’s performance on more than just an economic basis.

6.1 Limitations of the analysis

There are limitations to this analysis which makes it somewhat biased. The first limitation is the sample size of seven companies which has not been selected randomly but due to the availability of data. Since these were the only companies that filed data with the CDP it can be assumed that they are already more involved in sustainability than their peers who did not publically disclose their emissions. Furthermore, the trustworthiness of information sources such as a corporate website is questionable as companies try and present themselves in the
best light possible. Therefore their statements could be exaggerated or mere lip service and do not offer the best way to evaluate human sustainability. Another limitation in the analysis is that the measurement techniques (Appendix 1) are chosen based on the accessibility of information and therefore do not reflect all indicators for Corporate Sustainability. Other markers to take into consideration for evaluating Corporate Sustainability that could not be measured include but are not limited to: Waste management, resource efficiency, reduced environmentally damaging inputs, innovation management and accident prevention strategies.

6.2 Opportunities for further research

Opportunities for further research include but are not limited to researching the influence First Nations or environmental NGO’s have on oil & gas extraction projects or infrastructure projects such as pipelines. This would be a valuable addition to this research because Canada does not only have abundant natural resources but also a lot of wildlife that depends on an unharmed environment to thrive. Additionally, the First Nations in Canada are the owners of vast areas of land that are commonly used for oil & gas extraction, yet they do not benefit accordingly from it.

Additional research can be done into what sustainability measures companies, such as Imaginea Energy or others, are already undertaking and then find best practices for the industry. This has to be done in collaboration with multiple oil & gas companies or industry organizations because the nature of this information is likely confidential.

Research can also be done into the changing perception of climate change and the impact it has on regulations, such as carbon taxes, or on consumer behavior. Another opportunity for further research would be to re-perform this research in five years from now to see what, if anything, has changed.

Further reading is also suggested, especially to explore why Corporate Sustainability is advantageous for many companies and how it can be achieved through daily activities. Two sources that would be recommended in this context are the books that have been referenced in this research paper as well. Namely ‘Organizational Change for Corporate Sustainability’ by Benn, Dunphy and Dexter which offers a broad picture of the concept, its benefits and ways it can be achieved. The other noteworthy book on this concept is ‘Making Sustainability Work’ by Epstein and Buhovac which focuses in greater detail of how Corporate Sustainability can be achieved.
7. Conclusion and Recommendations

This is the final chapter of the research paper and it will briefly summarize the research findings and recommendations made in the previous chapters.

7.1 Conclusion

To sum up, the research question, including all sub-questions as stated at the beginning of this paper will be answered here.

Research Question

What is the state of Corporate Sustainability in the Western Canadian oil & gas industry and how can junior and intermediate producers improve it?

The analysis of the sustainability phase model has shown that junior and intermediate producers are usually in the people-centred quadrant of the Corporate Sustainability matrix which means they are compliant to environmental regulations and use charitable giving and good workplace atmosphere as a means to attract skilled workers. However, their environmental performance is rather poor as they emit a substantial amount of GHG’s into the atmosphere and have generally no climate strategy in place.

At the same time, most of them run profitable operations that are decently governed. Still, there is much room for improvement in the corporate governance aspect, especially in respect to board diversity. The products they sell are not diversified and therefore very vulnerable to commodity price swings or other externalities such as new rules and regulations.

The main points to improve upon in regards to Corporate Sustainability is waste management by avoiding to flare and vent gas, establish a climate strategy with tangible goals and be accountable for them, diversify the board and establish other revenue generating units that are not as dependent on externalities as the extraction business.

Sub-questions

1. How does current theory define Corporate Sustainability?

There is no unified definition of Corporate Sustainability but current literature defines it as the trifecta of economic, social and environmental sustainability which all have to be addressed in order for a corporation to be considered sustainable. In many instances it is also referred to as the triple bottom line or strategic sustainability because these concepts are very alike. As there is no cohesive definition of this term there is also no specific way of measuring it and many researchers have established
their own guidelines (Appendix 1). But even with these guidelines it is uncertain which weigh each category and parameter should carry.

2. **What are junior and intermediate oil & gas companies?**

As with Corporate Sustainability, there is no unified definition of junior and intermediate oil & gas companies. However, the predominant definition is that they have to be exploration and production companies who engage in conventional and unconventional production methods such as horizontal drilling and hydraulic fracturing. Companies who focus exclusively on oil sands extraction are exempt from this definition and referred to as either junior or intermediate oilsands companies because their production methods and risk profiles differ a lot from regular oil & gas companies.

Junior and intermediate oil & gas companies are categorized based on their daily production of oil equivalent. In general, it can be said that juniors produce between 500 boe/d and 10,000 boe/d and intermediates produce between 10,000 boe/d and 200,000 boe/d whereas every company with less production is regarded as an emerging oil & gas company and with more production as a major oil & gas company.

3. **What are the major risks junior and intermediate oil & gas companies are facing?**

The major risks junior and intermediate oil & gas companies are facing have been determined through interviews and literature review, with the five most important ones being:

- Access to capital
- Commodity price volatility
- No access to international markets
- Tougher climate regulations
- Health and Safety risks at their operations

4. **Which sustainability initiatives do junior and intermediate oil & gas companies have at the moment?**

Most of their corporate sustainability initiatives centre on human sustainability as they try to attract and retain skilled workers. These initiatives include giving back to the communities in which they operate, offering a good work atmosphere and practice health and safety measurements. But, with the exception of Imaginea Energy, none
of the companies in this sample strives to move beyond compliance and towards efficiency in environmental sustainability. As for economic sustainability, companies in this industry seem to lean toward short-term profitability rather than longevity as they are not differentiating their products or operations nor place great emphasis on corporate governance.

5. **Is the Social License to operate relevant for junior and intermediate oil & gas companies?**

The social licence is to some extent relevant for junior and intermediate oil & gas companies because they depend on landowners to allow them to drill on their land and they also depend on pipelines going through aboriginal territory who all have potential concerns about oil & gas development or transportation. Furthermore, they face increased pressure by other stakeholders such as NGO’s who actively want to implement new rules and regulations surrounding oil & gas extraction. Due to all these factors it is important for them to maintain and foster their social license to operate, otherwise they could be impacted in a negative way. For example through occupation of an operational site, refusal of landowners to let them drill on their property or other factors.

7.2 **Recommendations**

Recommendations, such as capturing gas instead of flaring it, reducing water input and GHG emissions which are given as part of analysis of Corporate Sustainability are subjectively made by the researcher as suggestions on how to become a more sustainable corporation. Especially in the face of the stark decline in oil prices since September 2014, oil & gas companies should focus on becoming more sustainable as it will not only have the potential to save costs right now but also in the future. Immediate cost savings can be achieved through waste reduction in their operations, by finding ways to use less water, sand and chemicals for fracking, by capturing flare gas to power generators or by establishing alternative sources of income. Long-term savings can be achieved by becoming more efficient overall and reduce GHG emission as it is more likely that the government will implement a carbon tax in a low price environment to not harm consumers as much. Furthermore, by engaging other stakeholders such as landowners and aboriginal groups, will also enhance a corporations’ social license to operate and with it its negotiating power for bigger developments.

These recommendations as well as the analysis remain valid and would significantly improve a corporation’s sustainability performance. If these companies start viewing sustainability as an integral part of their business and treat it as a measure to improve efficiency then they will
likely be able to find cost cutting opportunities. This could not only help them survive the currently depressed commodity prices but also sets them up for success when commodity prices rebound and they are in a more competitive position. Additionally, if a company gets sold after a period of high growth, as it is often the case with juniors, then the buyer might be willing to pay a premium if he can get comfort over the possible future environmental liabilities of the company.

Sunesis could potentially use the findings in this report to assess different risks, such as the reputational risk from non-compliance. Furthermore Sunesis could establish controls over releasing information to environmental third parties, such as the CDP, to ensure accuracy and validity of information. Additionally, the Sustainability phase model could be integrated into new advisory services that aim at improving efficiencies by becoming more sustainable and therefore add value to their clients. In any case, it is suggested to do more research into the benefits of Corporate Sustainability as suggested in chapter 6.2 and to do a deeper analysis into which sustainability measures a company can implement.
References


Appendix 1 – The Three Dimensions of Corporate Sustainability

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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Economic</td>
<td>1. Corporate governance</td>
<td>1. Established government relations</td>
<td>1. Employee compensation</td>
</tr>
<tr>
<td></td>
<td>2. Codes of conduct/compliance, corruption, and bribery</td>
<td>2. Reduced costs of inputs</td>
<td>2. Donation/community spending</td>
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<tr>
<td></td>
<td>3. Risk and crisis management</td>
<td>3. Reduced costs for waste management for same level of outputs</td>
<td>3. Local sourcing/local hiring/taxation</td>
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<tr>
<td></td>
<td>5. Innovation management</td>
<td>5. Differentiated product on environmental performance</td>
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<td></td>
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<td>6. Created spin-off technologies</td>
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<td>Social</td>
<td>1. Human capital development</td>
<td>1. Considered stakeholder interests</td>
<td>1. Labor/management relations</td>
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<td>2. Talent attraction and retention</td>
<td>2. Communicated environmental risk</td>
<td>2. Occupational health and safety</td>
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<td>3. Occupational health and safety</td>
<td>3. Improved health and safety issues</td>
<td>3. Training</td>
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<td>5. Social reporting</td>
<td>5. Improved facility’s visual aspect</td>
<td>5. Child labor/force labor</td>
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<td>6. Funded local community projects</td>
<td>6. Society: community, volunteer program</td>
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<td>7. Society: corruption, equality, and mutual benefit</td>
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<td>8. Product responsibility: consumer health and safety, labeling, marketing communities</td>
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<td>1. Environmental management system</td>
<td>1. Reduced products’ harmful environmental impacts</td>
<td>1. Recyclable materials</td>
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<td>2. Energy conservation</td>
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<td>3. Climate strategy</td>
<td>3. Used inputs from renewable sources</td>
<td>3. Emissions and waste</td>
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<td>4. Product stewardship</td>
<td>4. Reduced environmental impacts of processes</td>
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<td></td>
<td>5. Biodiversity</td>
<td>5. Reduced operations in environmentally sensitive locations</td>
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<td>6. Reduced likelihood of environmental accidents</td>
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<td>7. Reduced waste</td>
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<td>8. Re-used waste</td>
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<td>9. Disposed waste responsibly</td>
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<td></td>
<td></td>
<td>10. Handled toxic waste responsibly</td>
<td></td>
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</table>

Retrieved from (Montiel & Delgado-Ceballos, 2014)
Appendix 2 – Oil & gas plays in Western Canada

Retrieved from (PAC West, 2012) and cropped to only show Western Canada
### Appendix 3 – Corporate Governance Evaluation

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Total (100)</th>
<th>5-yr % return</th>
<th>Industry Group</th>
<th>Board Composition (32)</th>
<th>Shareholding and Compensation (28)</th>
<th>Shareholder Rights (28)</th>
<th>Disclosure (12)</th>
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<td>23</td>
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<td>69</td>
<td>Enerplus Corp.</td>
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<td>0.26</td>
<td>Energy</td>
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<td>87</td>
<td>Baytex Energy Corp.</td>
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<td>73.6</td>
<td>Energy</td>
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<td>23</td>
<td>25</td>
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<td>Bonavista Energy Corp.</td>
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<td>Energy</td>
<td>21</td>
<td>9</td>
<td>15</td>
<td>8</td>
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</tbody>
</table>

Retrieved and filtered from (Globe and Mail, 2014)
### Appendix 4 – Carbon Disclosure Project Matrix

<table>
<thead>
<tr>
<th>Question</th>
<th>Arc Resources</th>
<th>Baytex Energy</th>
<th>Bonavista Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDP - Disclosure Score Climate Change 2014</td>
<td>93</td>
<td>81</td>
<td>65</td>
</tr>
<tr>
<td>CDP - Performance Band</td>
<td>B</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>CC1.2 Do you provide incentives for the management of climate change issues, including the attainment of targets?</td>
<td>Yes*</td>
<td>No</td>
<td>Yes*</td>
</tr>
<tr>
<td>CC2.1 Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities</td>
<td>Integrated into multi-disciplinary companywide risk management processes*</td>
<td>Integrated into multi-disciplinary companywide risk management processes*</td>
<td>Integrated into multi-disciplinary companywide risk management processes*</td>
</tr>
<tr>
<td>CC2.2 Is climate change integrated into your business strategy?</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>CC3.1 Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?</td>
<td>Absolute and intensity targets*</td>
<td>Absolute and intensity targets*</td>
<td>Intensity targets*</td>
</tr>
<tr>
<td>CC5.1 Have you identified any climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure?</td>
<td>Risks driven by changes in regulation* &lt;br&gt; Risks driven by changes in physical climate parameters* &lt;br&gt; Risks driven by changes in other climate-related developments*</td>
<td>Risks driven by changes in regulation* &lt;br&gt; Risks driven by changes in physical climate parameters* &lt;br&gt; Risks driven by changes in other climate-related developments*</td>
<td>Risks driven by changes in regulation* &lt;br&gt; Risks driven by changes in physical climate parameters* &lt;br&gt; Risks driven by changes in other climate-related developments*</td>
</tr>
<tr>
<td>Question</td>
<td>CC6.1</td>
<td>CC12.1</td>
<td>CC13.1</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Have you identified any climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunities driven by changes in regulation*</td>
<td>Opportunities driven by changes in other climate-related developments*</td>
<td>Opportunities driven by changes in regulation*</td>
<td>Opportunities driven by changes in other climate-related developments*</td>
</tr>
<tr>
<td>CC12.1</td>
<td>How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?</td>
<td>Increased</td>
<td>Increased</td>
</tr>
<tr>
<td>CC13.1</td>
<td>Do you participate in any emissions trading schemes?</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>CC13.2</td>
<td>Has your organization originated any project-based carbon credits or purchased any within the reporting period? Calculate emission offset per boe</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>OG1.6</td>
<td>Do you conduct any scenario analysis based on a low-carbon scenario consistent with reducing GHG emissions by 80% by 2050 to achieve the 2°C goal in your assessment of the economic viability of proved undeveloped and undeveloped reserves?</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
### Appendix 4 – Carbon Disclosure Project Matrix (continued)

<table>
<thead>
<tr>
<th>CDP - Disclosure Score Climate Change 2014</th>
<th>Crescent Point Energy</th>
<th>Enerplus</th>
<th>Pengrowth Energy</th>
<th>Vermillion Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>83</td>
<td>85</td>
<td>80</td>
<td>87</td>
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<tr>
<td>CDP - Performance Band</td>
<td>D</td>
<td>C</td>
<td>C</td>
<td>B</td>
</tr>
<tr>
<td>CC1.2 Do you provide incentives for the management of climate change issues, including the attainment of targets?</td>
<td>No</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>CC2.1 Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities</td>
<td>Integrated into multi-disciplinary companywide risk management processes*</td>
<td>Integrated into multi-disciplinary companywide risk management processes*</td>
<td>Integrated into multi-disciplinary companywide risk management processes*</td>
<td>Integrated into multi-disciplinary companywide risk management processes*</td>
</tr>
<tr>
<td>CC2.2 Is climate change integrated into your business strategy?</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
<td>Yes*</td>
</tr>
<tr>
<td>CC3.1 Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?</td>
<td>No</td>
<td>No</td>
<td>Intensity target*</td>
<td>Absolute target *</td>
</tr>
<tr>
<td>CC5.1 Have you identified any climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure?</td>
<td>Risks driven by changes in regulation*</td>
<td>Risks driven by changes in regulation*</td>
<td>Risks driven by changes in regulation*</td>
<td>Risks driven by changes in regulation*</td>
</tr>
<tr>
<td></td>
<td>Risks driven by changes in physical climate parameters*</td>
<td>Risks driven by changes in physical climate parameters*</td>
<td>Risks driven by changes in other climate-related developments*</td>
<td>Risks driven by changes in physical climate parameters*</td>
</tr>
<tr>
<td></td>
<td>Risks driven by changes in other climate-related developments*</td>
<td>Risks driven by changes in other climate-related developments*</td>
<td>Risks driven by changes in other climate-related developments*</td>
<td>Risks driven by changes in other climate-related developments*</td>
</tr>
</tbody>
</table>
**CC6.1**
Have you identified any climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

<table>
<thead>
<tr>
<th>Opportunities driven by changes in regulation*</th>
<th>Opportunities driven by changes in other climate-related developments*</th>
<th>Opportunities driven by changes in physical climate parameters*</th>
<th>Opportunities driven by changes in other climate-related developments*</th>
</tr>
</thead>
</table>

**CC12.1**
How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

<table>
<thead>
<tr>
<th>Increased</th>
<th>Decreased</th>
<th>Increased</th>
<th>Increased</th>
</tr>
</thead>
</table>

**CC13.1**
Do you participate in any emissions trading schemes?

<table>
<thead>
<tr>
<th>No, and we do not currently anticipate doing so in the next 2 years</th>
<th>No, and we do not currently anticipate doing so in the next 2 years</th>
<th>No, but we anticipate doing so in the next 2 years</th>
<th>No, and we do not currently anticipate doing so in the next 2 years</th>
</tr>
</thead>
</table>

**CC13.2**
Has your organization originated any project-based carbon credits or purchased any within the reporting period? Calculate emission offset per boe

<table>
<thead>
<tr>
<th>No</th>
<th>N/A</th>
<th>Yes*</th>
<th>No</th>
</tr>
</thead>
</table>

**OG1.6**
Do you conduct any scenario analysis based on a low-carbon scenario consistent with reducing GHG emissions by 80% by 2050 to achieve the 2°C goal in your assessment of the economic viability of proved undeveloped and undeveloped reserves?

<table>
<thead>
<tr>
<th>No</th>
<th>N/A</th>
<th>No</th>
<th>No</th>
</tr>
</thead>
</table>

*Examples included in the respective reports*
1. Why did you chose to start and oil & gas company around the concept of the triple bottom line - Compared to a renewable energy company?
   • Change has to come from within the industry. There is a huge need for petroleum products in our world and therefore it’s not possible to stop producing oil and gas right away. But you can find better ways to do so.
   • CSR is considered separate of the business by many organizations and many bigger companies do it because they should do it and not because they want to do it. They feel forced.
   • If you make CSR or sustainability part of your business you, as an oil and gas company, can find better ways to produce fossil fuels and become more sustainable by the very nature of what drives you as a person

2. What has your experience been so far compared to your previous three companies? What is the biggest difference with this new model?
   • Same kind of business model. Buy mature, conventional assets and make them produce more
   • Difference now: We want to improve every aspect of what we are doing

3. How do you implement people, planet & profit into your business? Could you give me a concrete example?
   • Underlining principle of “and” -> Look at more benefits with all purchases we do for example: has the property already existing infrastructure that we can use? Is there a gas plant, oil battery or pipeline nearby that can be utilized?
   • We are also working on a technology that can capture gas that would otherwise be flared and turned into fuel for the power generators on site. That has two advantages,
   • We still buy assets, drill, build pipeline etc. But now the guys in the field don’t idle their trucks anymore, we implemented collaborative recycling projects and barely use paper (most of our documents are electronic)

4. Are you gas or oil weighted?
   • Oil-weighted with a production of around 2,800 boe/d

5. What, in your opinion is the biggest risk for Juniors and Intermediates?
   • Access to capital

6. Net Positive Environmental Difference (NPED)

   It is mentioned on your website, that:

   If it is not feasible to achieve a NPED, then adopt a mindset that we can do better than the regulations require or that we can do better than what is common, for example:
   • No emissions or flaring
• Change truck use, no idling

How do you go about that?

• “Cool technology” Capture flare gas, turn it into electricity and power generators
• Don’t drive up to the site anymore to deliver propane
• But it’s still in its testing phase

7. Do you expect environmental regulation around oil & gas extraction to become more stringent in the next 5 years?
   • Yes of course, environmental pressure is only going to increase and that is a good thing

8. Do you also produce renewable energy?
   • Not yet, but we are collaborating with Enmax to generate power for the site from renewables or offer that solar and wind companies use the land that we already have for renewable electricity generation
Appendix 6 – Interview Heather Douglas
Summary Questionnaire – Heather Douglas November, 20th 2014

1. What, in your opinion, is the single biggest risk junior / intermediate oil & gas companies face in Canada?
   - Cost of capital
   - Good reserves

2. How concerned are these companies about corporate sustainability? Meaning about their environmental impact, their social impact and their longevity as a company?
   - Big companies care cause of their shareholders
   - Smaller companies have other things on their mind
   - CSR is just for do-gooders, it’s not part of business
   - Once you have over 50 employees, you care about engaging young people, so you start thinking about these things

3. How important is the ‘social license’ to operate for junior / intermediate oil & gas companies?
   - Depends on property, it can be very important on First Nation land (aboriginal land)

4. Do you expect environmental regulation around oil & gas extraction to become more stringent in the next 5 years?
   - No, Canada already has some of the most stringent in the world
   - But no one knows if these regulations get tougher or not. Many people want to have zero emissions but that is just not possible

5. Do you think integrated environmental reporting, that is publically disclosed, is necessary for oil & gas companies?
   - No, the carbon tax was a flop in Europe
   - But the bigger you get as a company, the more you have to care about that and some people are already doing that even if they don’t disclose it publically
   - There are approximately 600 oil & gas companies in Canada out of which 500 are very small and maybe around 100 are bigger and want attract international capital. For these companies who want to attract capital from abroad it could be an advantage to have environmental reporting figures for investors

6. Do you have any interesting thoughts or facts about sustainability relating to junior / intermediate oil & gas companies?
   - They work extremely hard but they are not going above and beyond regulations
   - To give you a metaphor:
     - You can only buy what you can afford. Juniors usually don’t have much cash to spare so they focus everything on exploration and getting the resource out of the ground. But once they grow bigger, they have more free cash flow and can start thinking about sustainability initiatives. It is
the same with countries. Many countries in the developing world have
very lax regulation around oil & gas development because they are in no
position to negotiate for stronger terms. They are like a 20 year old
Chevrolet with many miles on it. You only drive it because you have no
other choice. But then you also have countries like Canada with very
strong regulations and carbon taxes etc. Because they are already a
wealthy economy they can focus on these issues. We are a Cadillac in
this example. And countries as well as companies have to grow into these
Cadillac regulations first as they will shift priorities over time.
Appendix 7 – Interview Gary Leach

E-mail confirmation from Gary Leach

Patrick see my comments below.

With these ‘edits’ you can certainly use my name/job title in your paper.

Some of my suggested edits are a result of the rapid and huge changes in the business landscape for oil and gas as a result of the fifty percent drop in the global benchmark prices for crude oil.

Gary Leach

From: Patrick Alexander [mailto:palexander@sunesis.ca]
Sent: January-06-15 3:57 PM
To: explorsandproducers.ca'
Subject: Follow up for thesis

Hi Gary,

How are you doing? I hope you had a merry Christmas and a great start into the New Year!

I just wanted to follow up with you quickly about our interview for my bachelor thesis. You mentioned that I could use your name and title if you know the direct context of the references. Therefore I’ll send you the paragraphs in which you are mentioned in this email and it would be great if you can let me know if I am able to use your name and title which would give my research more credibility than an anonymous response.

Thank you very much!

Industry experts such as Gary Leach, the president of the Explorers and Producers Association of Canada (EPAC), an industry group representing junior and intermediate oil and gas companies in Western Canada, mention that the single biggest risk, apart from current volatility and depressed prices for crude oil and natural gas, especially for smaller companies, is how to attract and retain the support of capital market investors. Junior and intermediate producers are more reliant on equity markets to fund capital investment programs while large producers can generally fund their capital programs from existing cash flow or debt. Because their main challenge is to be profitable in Canada’s high-cost environment due to high labor expenses and costly drilling techniques such as horizontal drilling and hydraulic fracturing that are more capital intensive than conventional production methods. Additionally, they also receive some of the lowest oil prices in the world which adds to the challenge (Leach, 2014).
The current lack of market access outside North America and the political uncertainty of proposed pipelines and LNG terminals constitutes another important risk which also negatively impacts the willingness of investors to support this sector according to Gary Leach (Leach, 2014).

Gary Leach argues that junior and intermediate oil & gas companies are usually built to be sold (driven by the objective to provide a return of capital to investors) and that their main focus is on getting a competitive investment return for their investors. Therefore corporate sustainability is not the main topic of conversations they are having... Still, due to the tough regulations in Western Canada surrounding resource extraction oil and gas producers place a high priority on minimizing their environmental impact to comply with the law (Leach, 2014).

Asked about the likelihood of increasing environmental regulations over oil & gas extraction in the next five years Gary Leach and Suzanne West were both stating that the environmental pressure is constantly increasing and that regulation will follow incrementally (Leach, 2014) (West, 2014)

I will also send you the finished research paper once it has been approved.

Best regards,

Patrick Alexander
Special Project Analyst
Appendix 8 – Interview Ricardo Cosentino

E-mail confirmation from Ricardo Cosentino

Ya, that's fine with me

Sent from my iPhone
Mark as unread

Hi Ric,

Attached are the paragraphs of my research paper in which I referenced you. Do you agree that I captured your statements from our interview correctly?

Ricardo Cosentino, Senior Manager at Sunesis Consulting, who has over a decade of experience in evaluating and mitigating risks of oil & gas companies argues that the single biggest risk they face is the price volatility of oil and natural gas (Cosentino, 2014). His claim is supported by the recent downturn in commodity prices that caused many companies to cut their capital spending forecast in late 2014. In total, nearly $60 billion in capital investments have been delayed in the Canadian oil & gas industry until 2018.

Asked about the likelihood of increasing environmental regulations over oil & gas extraction in the next five years Gary Leach and Suzanne West were both stating that the environmental pressure is constantly increasing and that regulation will follow incrementally (Leach, 2014) (West, 2014). Whereas Heather Douglas argued that Canada already has some of the most stringent regulations in the world and does not expect them to become tougher in the coming years (Douglas, 2014). Ricardo Cosentino on the other hand reasons that stricter environmental regulation should be applied at the consumer level to decrease the demand and that this will drive prices down and with it new drilling, as is happening at the moment. He therefore does not expect changes in environmental regulation for producers but says that they still will be indirectly impacted by changes in regulation for consumers (Cosentino, 2014).

Thanks!
Patrick Alexander
Special Project Analyst