

**CONFLICT PREVENTION AND RESOLUTION IN ENVIRONMENTAL  
IMPACT ASSESSMENT: A STUDY OF THE DEVELOPMENT OF THE  
GJØVIK EIDSIVA PLANT**

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## **Abstract**

Environmental impact assessment (EIA) ensures that a development moves forward in a way that is beneficial for the local environment and community. Good practice in EIA involves participation from many different parties, which often results in differences in interests, values and beliefs being brought to light. These differences can lead to conflict, a commonly occurring feature of EIA.

The objectives of this study were to 1) identify methods and procedures that resulted in conflict, and 2) identify successful methods and procedures that helped prevent or resolve conflict in EIA, including post approval relationships between key stakeholders. This qualitative case study focused on the development of a bioenergy plant by Eidsiva in Gjøvik, Norway. This case involved considerable conflict and nearly divided the city, as demonstrated by the final vote for the project in the Gjøvik municipality board, 23 for the project and 22 against.

This case demonstrated several aspects of good EIA practice, which limited conflict in certain parts of the EIA. It also included aspects that were not in line with good practice, and this increased and intensified conflict. While conflict is usually viewed as negative, this case demonstrates how conflict can ultimately be beneficial if it is resolved. Respect for the government, good practice in EIA, strict environmental regulations, and a unique political system are characteristics of this case that prevented or resolved conflict.

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## **List of Abbreviations**

- EIA: Environmental Impact Assessment
- EIS: Environmental Impact Statement
- EEA: European Economic Area
- EFTA- European Free Trade Association
- EU: European Union
- GWh- Gigawatt hours
- IAIA: International Association for Impact Assessment
- MOE: Ministry of Environment (Norway)
- NEPA: National Environmental Policy Act (United States)
- UN: United Nations

## 1. INTRODUCTION

### 1.1 Background

Economic development is essential to ensure ongoing social development and ultimately a high quality of life, however, it often comes with negative environmental and human consequences, such as air pollution and a decline in human health (Noble, 2015). As an effort to help minimize and eliminate some of these negative consequences as well as enhance the positive impacts of economic development, environmental impact assessment (EIA) can be used as a tool to predict and alter these impacts before they happen (Morgan, 1998).

Environmental impact assessment is a multi-step process that includes screening, scoping, impact prediction, significance determination and follow-up<sup>1</sup> (Morgan, 2012). While EIA spread globally and has improved much since its introduction in the 1970's in The United States, there is still room for improvement (Noble, 2015; Fuggle, 2005). The purpose of EIA is to ensure that an undertaking moves forward in the most beneficial way for the affected communities and environments (Lawrence, 2003; Hanna 2005). It is therefore important to work towards better understanding of effective methods of EIA to ensure that people and the environment are protected.

Environmental impact assessment often involves conflict because of the frequently occurring differences in interests, priorities and expectations among people who are involved with the EIA and those who are affected by the project (Mitchell, 2002; Noble, 2015). There are many techniques available to resolve or lower the extent of conflict including alternative dispute resolution such as negotiation, mediation and

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<sup>1</sup> These steps are described in section 2 of the thesis.



arbitration (Doelle & Sinclair, 2010). If these methods are not effective or appropriate, EIA cases can end up in the courts, although this is rare. These methods are not usually a formal component of an EIA, however, they can be used to make the process more productive (Doelle & Sinclair, 2010). While these methods are useful in some cases, they are not successful in all conflicts that arise through EA (Mitchell, 2002). Conflict continues to play a role and influence the EIA process.

The follow-up stage of EIA is an essential component of good practice and includes monitoring, evaluating, managing and communicating the performance of the project and the plans created in earlier EIA stages (Marshall et al., 2005). Follow-up typically includes the proponent, a regulator, and the communities that are interested in or affected by the project (Marshall et al., 2005). Since this is the last stage of the EIA process and is very important for testing the assessment's effectiveness, conflict during follow-up can have serious consequences for the EIA's long-term efficacy. In this stage, conflict from previous stages can carry forward and worsen long-term relationships and impacts. It is, therefore, important to understand how to prevent and resolve conflict in follow-up and other stages of EIA. Such understanding would allow for a more effective process for those who are actively involved and will also be beneficial for those impacted by new developments. While there has been considerable research done on effective EIA follow-up and conflict resolution, gaps in the literature remain including grounded understanding of causes of, and ways to resolve, conflict.

## **1.2 Purpose**

The purpose of the research was therefore to understand the causes and prevention of conflict in EIA.

The original research objectives were to: 1) identify methods and procedures that result in conflict, 2) identify successful methods and procedures that help prevent or resolve conflict in EIA, and 3) describe approaches that support conflict-free EIA follow-up. After arriving in Norway, it was discovered that follow-up was not of primary concern to many of the research participants and it did not play a major part in conflict and conflict resolution, and as a result there was not sufficient data collected on the subject. Therefore, following Nelson's (1991) interactive and adaptive approach to research in human ecology or geography, I made adjustments to my research design including modifying objective three and narrowing the scope of my analysis.

The revised objectives thus became to: 1) identify methods and procedures that resulted in conflict and 2) identify successful methods and procedures that helped prevent or resolve conflict in EIA, including post-approval relationships among key stakeholders.

## **2. LITERATURE REVIEW**

### **2.1 Environmental Impact Assessment**

#### **2.1.1 History**

Environmental impact assessment (EIA) emerged as a policy response to growing environmental concerns in the 1960's, and was first established in the National Environmental Policy Act (NEPA) in the United States (Noble, 2015; Achieng Ogola, 2007; Morris & Therivel, 2009). The purpose of NEPA was “to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans” (NEPA, 2017). This led to the introduction of environmental impact statements (EIS) for new developments, which was the start of the development of EIA procedures (Noble, 2015). Throughout the years, EIA has become more complex and it has become a common tool used in environmental management around the world (Lawrence, 2013; Hanna, 2009). There have been several international declarations and agreements on the use of EIA, including the United Nations Conference on the Environment (1972) Rio Declaration (1992), the United Nations Convention on Climate Change and Biological Diversity (1992) and the Doha Ministerial Declaration (2001) (Achieng Ogola, 2007; IAIA, 2009). Today, EIA is globally accepted with all but two United Nations (UN) member-countries either having their own legislation or making a commitment for its use through an international agreement (Morgan 2012).

#### **2.1.2 Environmental Impact Assessment in Norway**

Environmental impact assessment was accepted by the Norwegian Parliament in 1990 and was incorporated into the Building and Planning Act (Norway Ministry of the Environment, 2003; Holm-Hansen, 1997). Prior to this official introduction of EIA, Norwegian law required developers to study the environmental consequences of their

development but not necessarily other impacts of development. (Holm-Hansen, 1997). While there was some assessment of environmental impacts, it was limited to certain environmental components protected by legislation (Holm-Hansen, 1997).

With changes in 1999, EIA provisions in Norway became based on the European Union (EU) Directive on Environmental Impact Assessment as well as the UN Convention on Environmental Impact Assessment in a Transboundary Context (Norway Ministry of the Environment, 2003). While Norway is not a full member of the EU, in regards to EIA procedures and environmental policy, they closely follow EU requirements because the country is part of the European Economic Area (EEA) (Norwegian Ministry of Foreign Affairs, 2015). The EEA deals with the free movement of goods, services, capital and people among the member countries (Norwegian Ministry of Foreign Affairs, 2015). It also requires member countries to comply with EU environmental law and cooperate with other EU nations (Norwegian Ministry of Foreign Affairs, 2015).

Even with the EU regulations for EIA, Norway and other Nordic countries have different EIA practices in comparison to other European countries (Holm-Hansen, 1997). In its early stage, EIA in Norway had a greater multidisciplinary approach in comparison to Baltic countries such as Estonia (Holm-Hansen, 1997). While other countries had EIA focus in on environmental impacts, Norway incorporated the EIA system into the Building and Planning Act, which allowed for experts in many different fields to provide input to assessments (Holm-Hansen, 1997).

Currently the Ministry of Environment (MOE) is responsible for environmental policy in Norway, with other departments offering support such as The Norwegian

Institute for Air Research and The Norwegian Pollution Control Authority (Norway Ministry of the Environment, 2003). Norwegian EIA has a large focus on participation of the public throughout the entire process (Norway Ministry of the Environment, 2003). In Norway the proponent is responsible for the content of the EIA with support of the government (Holm-Hansen, 1997).

### **2.1.3 Purpose**

EIA is a tool that can be used to ensure that a project moves forward in a way that is most beneficial for affected environments and communities (Lawrence, 2003; Hanna 2005). While its initial purpose was to ensure environmental protection, EIA now includes several other aspects such as social, health and economic impacts (Noble, 2015; Mitchell 2002). A definition put forward by The International Association for Impact Assessment (1999; 2009) is, “the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.” While the purpose of EIA is universal, goals of an EIA can change depending on the interests of those involved (Noble, 2015). One example is that an investor’s goal for an EIA could be to save money and ensure no laws are broken, whereas, a community member might have the goal of changing the location of the development. Each EIA will include unique situations and interests to which the EIA process will have to adapt.

### **2.1.4 Ensuring a Proper Assessment**

While the purpose of EIA is universal, practice and ultimately results may not be (Fuggle, 2005; Arts & Morrison-Saunders, 2004). EIA is a general procedure that is used in many different circumstances and therefore may not be completely effective in all of them (Fuggle, 2005). Some key components have been shared by the IAIA (1999; 2009)

to ensure that EIAs are completed with fairness and accuracy in all circumstances. This includes the EIA being efficient for the proponent while also gathering all pertinent information through reputable methods to help inform decision makers (IAIA, 1999; 2009; Hanna, 2005). It should have a focus on the most harmful impacts or on key components of the environment while remaining adaptive to new information and methods (IAIA, 1999; Hanna, 2005). As well, EIA should provide sufficient opportunities for participation of the public, allow for easy access to information, and ensure transparency throughout the process (Sinclair & Diduck, 2016; Hanna, 2005).

### **2.1.5 EIA steps**

Environmental impact assessment is a multistep process that typically includes screening, scoping, impact prediction, significance determination and follow-up (Morgan, 2012; Hanna, 2005). Screening involves identifying whether a project needs an EIA by looking at its possible impacts. This can be determined by legislation or impact severity (IAIA, 1999; Noble, 2015). As well, at this stage the extent of detail required for the EIA is determined (IAIA, 1999).

If an EIA is required, scoping involves identifying what components of the environment could be impacted and, therefore, will have to be examined during the assessment (Glasson et al., 2013). Public participation is very valuable in this stage to ensure all key components of the environment that may be impacted are identified (Hanna, 2005; Munier, 2004). Scoping starts after the screening stage, and it is valuable to continue scoping throughout the remainder of the EIA process (Achieng Ogola, 2007). Scoping often involves checklists, matrices, networks and consultations (Noble, 2015).

Impact prediction includes identifying potential consequences of the development on social, economic, cultural, ecological and biophysical aspects of the environment (Glasson et al., 2013). This is done with looking at the potential changes the project would cause relative to baseline conditions (Achieng Ogola, 2007). The changes can be measured both quantitatively and qualitatively (Noble, 2015; Munier, 2004), and impacts can be predicted through experiments, looking at similar projects, models, and visual analysis among other methods (Achieng Ogola, 2007).

Significance determination, which looks at an impact's severity, is one of the most critical steps in EIA, and is one of the most complicated (Noble, 2015). It includes looking at factors of impacts such as reversibility, temporal scale, spatial scale, likelihood and compatibility with other impacts (Glasson et al., 2013; Munier, 2004).

Upon identifying impacts and their significance, mitigations measures are then identified. The goal of mitigation is to identify the best approaches for enhancing a project's positive impacts and eliminating or minimizing the negative impacts (Treweek, 2009; Morris & Therivel, 2009). Some approaches to mitigation include avoiding, reducing, replacing, restoring and compensating (Achieng Ogola, 2007; Morris & Therivel, 2009). Avoidance is the most desirable method to managing negative impacts as it has a low financial burden on the proponent and results in no negative impact on the environment, however, it is not always possible (Noble, 2015). Reducing, replacing and restoring accepts that there will be a negative impact and it works towards minimizing it (Noble, 2015). Compensation is used when negative impacts cannot be avoided and other impact management methods are not possible (Noble, 2015). Compensation can be in the form of creating or supporting a healthy natural environment in an alternate site or

monetary benefits for those affected (Noble, 2015). While planning mitigation measures, it is important to use the precautionary principle, which states that mitigation measures should be planned for, even if the chance of an impact happening is minimal or if there is not currently enough information available to accurately predict (Morris & Therivel, 2009; Mitchell 2002; 2015).

The final stage is follow-up, which involves monitoring, auditing and evaluating the previous steps (Glasson et al., 2013). Follow-up happens once the approved project has been developed and is used to ensure that the conditions of the project's approval are met as anticipated (Arts & Morrison-Saunders, 2004; IAIA, 1999). This can be evaluated using baseline data, legal requirements, or through the predicted level of success for mitigation measures (Morris & Therivel, 2009). The main goal of follow-up is to evaluate the effectiveness of the EIA and make any needed adjustments if there are ways to improve the final outcome of the assessment process (IAIA, 1999).

## **2.2 Follow-up**

### **2.2.1 Purpose**

Follow-up is one of the essential components of EIA good practice (Marshall et al., 2005; Fuggle, 2005). It is not only important for enforcement and compliance and for improving outcomes, it is also important for learning from experience and improving policy and practice (Fuggle, 2005; Arts et al., 2001). Follow-up is a tool that can be used to gain knowledge of environmental impacts as well as to educate the public on how development impacts them and their environment (Arts et al., 2001). Further, good follow-up can make EIAs more credible as what is predicted in the planning stages of a project is often different from what actually happens (Fuggle, 2005). Follow-up can be used to improve current EIA methods through evaluating the accuracy of the pre-project



development stages (Arts et al., 2001). Despite its importance, follow-up is usually the weakest stage of EIA in most jurisdictions (Arts & Morrison- Saunders, 2004). But without good follow-up, failed mitigation measures, bad practice and inaccurate predictions cannot be identified and rectified (Fuggle, 2005; Arts & Morrison- Saunders, 2004). Also, follow-up allows for an adaptive approach in solving both anticipated and unanticipated problems with the development (Arts et al., 2001).

### **2.2.2 Follow-up steps**

Follow-up includes monitoring, evaluating, managing and communicating about the performance of the project and the plans created through the earlier EIA stages (Marshall et al., 2005). This stage typically includes the proponent, a regulator and the community that is interested or affected by the project (Marshall et al., 2005). Monitoring involves collecting data after development of the project and can include area-wide monitoring that looks into the overall state of the environment and cumulative effects of multiple projects (Arts et al, 2001). Evaluating involves judging if the outcomes of the project are in line with regulations, predictions and expectations, and often requires good baseline data from before the project's development (Arts et al, 2001). Managing refers to decision making and taking action when a problem is encountered during the monitoring and evaluating stage (Arts et al, 2001). The final component of follow-up includes communicating with the stakeholders and the public on the findings (Arts et al, 2001). EIA follow up can take place at different scales, including the micro scale where the proponent takes lead, the macro scale where the main regulatory authority takes control and the meta scale where multiple jurisdictions take control (Arts & Morrison-Saunders, 2004).

## **2.3 Conflict**

### **2.3.1 Prevalence of Conflict**

Conflict can be defined as “competitive or opposing action of incompatibles” or “to be different in a way that prevents agreement” (Merriam-Webster, 2017). Environmental change and the management of such change in many cases create conflict, which makes EIA a common place for conflict to occur (Dryer, 2008; Muldoon et al., 2015). Increasing demands on natural resources and the complex and uncertain implications of resource use often lead to conflict in environmental management (Dorcey & Riek, 1987). Environmental impact assessment often involves conflict because of the commonly occurring differences in interests, priorities and expectations among people who are involved with the EIA and those who are affected by the project (Mitchell, 2002). Although conflict in some cases can actually be beneficial, in other cases it can negatively impact the planning and decision-making process (Mitchell, 2002; Baron, 1991). Positive benefits of conflict include discussion of topics that may have previously been ignored as well as the development of new approaches and ideas that will aid decision making (Baron, 1991; Cosier 1978).

### **2.3.2 Conflict in follow-up**

Conflict in follow-up can have serious consequences for an EIA’s long-term efficacy. It is, therefore, important to understand how to prevent and resolve conflict in follow-up and other stages of EIA. Such understanding would enable a more effective EIA process for those who are actively involved and would also be beneficial for those impacted by new developments.

### **2.3.3 Types of conflict**

While conflict can arise in many different circumstances, Dorcey (1986) identified four basic causes for conflict in resource management. *Cognitive* conflict

results from a difference in knowledge or understanding of a phenomenon, such as the health of a given resource or ecosystem (Dorcey, 1986). This type of conflict could stem from people relying on different methods, predictions, models and information and involves varying opinions or uncertainty over facts. (Mitchell, 2002; 2015). *Value* conflict is caused by differences in values leading to varying goals or aspirations, such as resource extraction verses environmental protection (Dorcey, 1986). *Interest* conflict is caused by different opinions on the suitable distribution of costs and benefits of a given project such as a pipeline creation of a protected area (Dorcey, 1986; Mitchell, 2002; 2015). *Behavioural* conflict is a result of differences in personalities and circumstances in interested parties (Dorcey, 1986). This type of conflict can include parties who have a history with each other that already involves negative emotions, mistrust and lack of communication (Mitchell, 2015). The negative relationship between the groups could prevent an agreement from being reached (Mitchell, 2015). This type of conflict can even lead to groups taking revenge on each other as a result of previous disputes that were not resolved in their favor (Mitchell, 2002). It is common to deal with more than one cause of conflict at a time in EIA (Mitchell, 2002; 2015).

## **2.4 Resolving Conflict**

There are many techniques available to resolve or lower the extent of conflict in EIA and other resource management processes. Along with the conventional court system, alternative dispute resolution mechanisms, such as negotiation, mediation, facilitation and arbitration, are sometimes used (Doelle & Sinclair, 2010; Muldoon et al., 2015). Negotiation involves attempting to resolve conflict through direct discussion, sometimes involving lawyers or others who are trained negotiators (Muldoon et al., 2015). Facilitation, or mediation, attempts to resolve conflict with the help of an external

person to assist with communication and finding common ground (Muldoon et al., 2015). Arbitration involves external assistance to settle the conflict and delegation of authority to the external party to make final decisions to settle the matters in dispute (Muldoon et al., 2015).

Resolving disputes in EIA through the court system occurs from time to time. A recent Norwegian Example, focused on the expansion of oil extraction activities in the Arctic, which, was approved by the Norwegian Government after completion of an EIA (Greenpeace, 2017; 2018). In this case, by private interest groups, including Greenpeace Norway, Nature and Youth and the Grandparents Climate Campaign, argued that the expansion would violate the country's Constitution as Norwegian citizens have a right to a healthy environment (Greenpeace, 2017). The judge did not agree, and as a result 13 oil companies got approval for their expansion (Greenpeace, 2017; 2018). Environmental conflicts solved through the courts, such as this one, often attract significant media attention. This case had news coverage in several countries and in various media.

Negotiation, on the other hand, is commonly used and is usually done behind the scenes with few cases that gain media attention. Arbitration has not had a major role in EIA, and despite its early promise that is also the case for mediation (Doelle & Sinclair, 2010). With the use of alternative dispute resolution mechanisms, it is important to be mindful of the distribution of power (Kann et al., 1988). Power imbalances in these circumstances can result in unfair procedures being used (Kann et al., 1988). Some authors, however, see potential in alternative dispute resolution mechanisms making EIA processes more productive (Doelle & Sinclair, 2010; Sinclair and Diduck, 2016).

### 3. METHODS

#### 3.1 Research Approach

My research design was a qualitative case study (Creswell, 2009; Baxter, 2016), which allowed for an in-depth look into a complicated social phenomenon aimed at producing new knowledge that may be applied in other similar situations. As noted in section 2, I followed Nelson's (1990) interactive and adaptive approach which provides guidance for new scholars doing research in complicated social settings. According to Nelson (1990), it is realistic, appropriate and often necessary to adapt one's research design, including research objectives, after engaging with research participants. This is what happened after I began my fieldwork in Norway.

#### 3.2 Case Selection

This research was done through examining a case from Gjøvik, Norway. This case started in 2010 while government officials decided on the best possible approach to adding a new bioenergy central heating plant to the city (C. Storie, personal communication, September 6, 2017). Location and mitigation measures were among some of the topics discussed by government officials and interested parties throughout the EIA process. In this case, those involved seemed to be separated through differences in values and understandings concerning key components of the project. Further, these divisions led to conflict that started in the screening stage of the EIA. Ultimately, the final decision on the project was made by the city council, with the vote 23 for the project and 22 against. The EIA resulted in the successful introduction of the heating plant to the city and seeming harmony amongst the government officials who previously had conflicting views. This case was thus chosen for this research as it demonstrates an EIA procedure for a major project where people shared different interests, views, beliefs and

values. These differences among the government leaders and interested parties is a key factor that could have contributed to conflict during the EIA and after the decision making was complete. While there was great potential for conflict amongst those involved to continue, the project was able to move forward and conflict between major competitors was minimized upon the decision making stage.

### **3.3 Data Collection**

#### **3.3.1 Review of government documents and academic literature**

The research included a review of documents from local government in Gjøvik, academic literature and legislation. The government documents identified key components of the project and enhanced the data I gained through interviews. It also identified the procedure used for choosing the ideal location and how disagreements were resolved. The academic literature was used to gain understanding of EIA and various aspects of conflict, including how it is created, how it is increased or decreased, how it is resolved and how it can be avoided. The literature was also used to understand the Norwegian requirements for EIA including regulations that influenced mitigation measures for the project.

#### **3.3.2 Interviews**

Information was gathered through semi-interviews with selected individuals involved with the case, including local government officials (mayor and vice-mayor of Gjøvik), EIA practitioners who contributed to the assessment and community members. I had a total of nine interviews, and those who were interviewed provided many different perspectives on the project. Questions were asked on the EIA procedure, participants' reactions to others during the process, what people thought when new decisions were made, and how people reacted when the project went forward in a way that did not line

up with their values and beliefs. The interviews were done in person when possible, or over the phone for those who were not available when I was in Gjøvik. Prior to the interviews, individuals were provided with consent forms, which will be described in more detail in the ethical considerations section. I recorded the interviews with written notes and a digital audio recorder. The recordings were later transcribed verbatim. The interviews lasted anywhere from 45 to 60 minutes. My interview questions are attached in Appendix A.

### **3.3.3 Observation**

Information on the case was also gathered through observations. I visited and received a tour of the Eidsiva plant to gather information on the project, the impacts and the mitigation measures put into place. I made observations through walking around the residential neighborhoods as well as the commercial areas near to the plant to understand the impacts. I also visited the area of the alternative site for the project. This gave me a better understanding of the decision that was made as well as a better understanding of the concerns of those who are against the project. A visit to the Horizon Landfill site gave me the opportunity to tour the facility and learn about the waste sorting requirements and procedures within Gjøvik, before Eidsiva received the waste. Observations were recorded with field notes and photographs.

### **3.4 Data Analysis**

The data were analyzed through qualitative content analysis, using an inductive or grounded approach (Cope, 2016). Primary data (i.e., the interviews and observations) were analyzed through coding, sorting and identification of predominant, secondary and important outlier themes (Creswell, 2009). I followed procedures as outlined by Creswell

(2009) and Cope (2016). Codes were created to identify themes pertinent to each research objective.

### **3.5 Trustworthiness**

Due to the interpretative nature of qualitative research, I focused on trustworthiness rather than internal validity, external validity and reliability, which are suitable for experimental research. (Mansvelt & Berg, 2016). Baxter & Eyles (1997) outline four criteria that are used to ensure trustworthiness: credibility, transferability, dependability and confirmability. As part of my research design, I followed practices that helped insure that my results are trustworthy (Creswell, 2014; Baxter & Eyles, 1997).

Credibility involves ensuring that data are authentically represented (Baxter & Eyles, 1997). One method used to ensure trustworthiness with respect to credibility is through the use of different data sources (Creswell, 2014; Baxter & Eyles, 1997). In effort to ensure credibility, I obtained data from interviews, observations and reviews of documents.

Transferability refers to whether or not the research can be applied to other situations (Baxter & Eyles, 1997; Baxter, 2016). To ensure that my research is trustworthy in this aspect I have attempted to include thick description (Baxter & Eyles, 1997; Mansvelt & Berg, 2016). This involves providing the reader with in-depth details of the case study, which can make the results become more realistic (Creswell, 2014).

Dependability involves ensuring that data are accurate, and an effective way to ensure accuracy is to use field notes and audio recordings (Baxter & Eyles, 1997), two techniques I used in my research.



Confirmability involves preventing the researcher's bias, interests, motivations and perspectives from influencing the outcome of the research (Baxter & Eyles, 1997). Throughout my thesis research I have been mindful of how the findings could be shaped by my experiences and background, and I made efforts to prevent this by acknowledging the possibility of bias and reflecting on how to avoid it (Winchester & Rofe, 2016).

### **3.6 Ethical considerations**

A written consent form was provided to all participants prior to interviews, and participants were informed that their involvement was voluntary, they may decline to answer any question, and they could stop the interview at any time. Participants were also informed that as a result of a small sample size and due to a small community of participants, that others might be able to identify them from their responses. During the interviews, hand written notes were taken and with the consent of the participants, they were audio recorded. The audio recording was then transcribed to ensure accuracy. The participants were given the opportunity at the end of the interview to make any changes and clarify or add to any of their responses.

## 4. RESULTS

### 4.1 Introduction

The results are organized by research objective, presented as primary and secondary themes, and supported by verbatim quotations from research participants and other references to data sources.

### 4.2 Eidsiva Development

Gjøvik is a community located north of Norway's capital city of Oslo, the in Oppland County (Statistics Norway, 2010). The population is approximately 30 000 people (Statistics Norway, 2010), and the people of Gjøvik are represented democratically through nine parties and 45 voting members in the municipality (B. Iddberg, personal communication, October 11, 2017).

Originally there were two companies competing for the right to develop a district heating plant, Eidsiva and Daimyo-Rindi (EFTA Surveillance Authority, 2012). There were differences in the proposals between the two companies, with the location as one of the key components. Eidsiva's plan was to develop within the city, while Daimyo-Rindi had plans to develop outside of the city. Originally Daimyo-Rindi was given permission to develop, however, this was reversed resulting in Eidsiva moving forward with the development.

Eidsiva is owned by two counties and 27 municipalities, with Gjøvik having a share of approximately three percent (Eidsiva, 2017). It is a company of approximately 1000 employees, and generates four billion Norwegian Kroner annually (Eidsiva, 2017). There are several departments within the Eidsiva company that provide services such as power network operation, power generation, renewable energy sales and broadband (Eidsiva, 2017).

Eidsiva received permission from Norwegian authorities for to develop a bio-energy plant in Gjøvik in 2010 (EFTA Surveillance Authority, 2012). The development was originally going to use waste wood and bio-oil to fuel an incinerator to provide 66 gigawatt hours (GWh) annually for heating, as well produce steam to provide 90 GWh of energy annually (EFTA Surveillance Authority, 2012). This project is in line with Norway's environmental goals as in 2020 it will be illegal to use oil to provide heat for buildings (Oppenheim, 2017; Kruse & Fosnes, 2017).

The district heating grid is 29.5 kilometers in length, reaching to several buildings in Gjøvik (EFTA Surveillance Authority, 2012). Hunton Fiber AS, one of Europe's leading producers of wood fiber boards and Hoff Norsk Potetindustri AS, Norway's largest producer of processed potato products, were going to receive the energy from the steam, changing from the oil based steam they were currently producing and using (EFTA Surveillance Authority, 2012).

On October 20, 2011, the plans to produce energy were dropped upon approval from Enova (EFTA Surveillance Authority, 2012), an organization run by the Norwegian Ministry of Petroleum and Energy (Enova, 2018). The bioenergy plant was originally supposed to open on November 1, 2012, however, changes to the project delayed the opening (EFTA Surveillance Authority, 2012).

As of November 30, 2017, all new building in Gjøvik over 500 square meters would have to use bioenergy for heating. The predicted amount of CO<sub>2</sub> emissions would decline by at least 47 000 tonnes, and use of oil would decline by 17 417 000 liters per year (EFTA Surveillance Authority, 2012). Total cost for the project was 458 979 000 NOK (approximately 77 578 645 CAD) (EFTA Surveillance Authority, 2012).

Figure 1: The Eidsiva Plant (October 9, 2017).



#### **4.3. Objective 1: Methods and Procedures that Resulted in Conflict**

For my first research objective, I identified five primary themes, four of which contain secondary themes, denoted below with italics.

##### **4.3.1 Perceived Conflict of Interest and Corruption**

###### ***4.3.1.1 Municipality Shares in the Ownership in the Proponent***

Eidsiva was a publicly owned company, owned by Hedmark and Oppland Counties and 27 municipalities within these counties (Eidsiva, 2017; EFTA Surveillance Authority, 2012). The Municipality of Gjøvik was a minority owner, owning approximately three percent of the company (Eidsiva, 2017). According to the current

city planner, because of these arrangements some stakeholders and members of the public lacked trust in the integrity of the project's EIA.

That being said, Gjøvik officials took care to avoid being placed in a conflict of interest. The owners of Eidsiva each had a representative who took part in the decision making for the company. The representative for the municipality of Gjøvik was the mayor, who took a very cautious approach towards the conflict of interest, recusing himself from the decision making affecting the project. As well, Gjøvik's administrative leader was on the board for Eidsiva's sister company and to eliminate the appearance of conflict of interest, an administrative leader from a neighboring municipality was hired to deal with the project's decision documents.

Ultimately, these perceived conflicts of interest were investigated through a "control system"<sup>2</sup> to ensure that there was no misconduct. The investigation was triggered by a complaint by the people opposed to the project to The County Man<sup>3</sup>, and in the end there was no misconduct found in this aspect of the EIA.

#### ***4.3.1.2 Changes to the Company's Approval***

Originally, a company other than Eidsiva, namely Daimyo-Rindi was granted the right to develop this project. The decision was made by a national body, which allows for only one concession to be granted per area (EFTA Surveillance Authority, 2012). Daimyo-Rindi's plans for the project were different than those of Eidsiva. Daimyo-Rindi wanted the project to be located outside of the city, near to the landfill site, while Eidsiva's plans

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<sup>2</sup> The control system is a term that was used by interview participants. The control system refers to a government organization responsible for conducting investigations of government actions. The control system has enforcement power in accordance with the law.

<sup>3</sup> The County Man is another term used commonly in the interviews. This term referred to a government official responsible for hearing complaints by citizens about government actions.

were to site the project within the city. The energy source was also a difference between the competing plants. Daimyo-Rindi wanted to burn waste and Eidsiva wanted to burn waste wood.

Daimyo-Rindi's location would have led to less conflict in the eyes of the current city planner, and all four community members discussed this issue when asked about the issues that resulted in conflict. The city planner and another government official said that Eidsiva "complained" and this is what led to it being granted the right to develop the project in place of Daimyo-Rindi. Two community members also talked about the power of Eidsiva's lawyers to remove the other company. Government Official 1 said, "But Eidsiva made a complaint, and the Ministry of Oil and Energy altered the decision." Community Member 1 said, "Eidsiva lined up their lawyers and that started the battle with the other company, so the other company collapsed."

#### ***4.3.1.3 Concerns over Land Sales***

Once Eidsiva got approval for the development of the bioenergy plant, they had to purchase the land where the plant would be sited, and this was owned by Gjøvik. The municipality set a price for the land through its official tax office, but some people thought this price was too low and this attracted media attention, led to considerable public debate and ultimately another complaint to the County Man. The price the land was sold for was 25-50 percent cheaper than what opponents thought it should be sold for. In an interview, government official 1 noted that there had been many accusations of corruption because of this land pricing issue.

Upon investigation by the County Man, it was determined that the price was not especially low; however, it is noteworthy that a Gjøvik official lost their job as a result of this investigation.

All four of the community members interviewed thought that there was corruption in the land transaction, with two of them identifying that they believe someone got private benefits from the deal. Three out of the four community members stated that they believed the price was too low. Community member 3 said, “This was not fair due to hidden business”. Similarly, Community Member 1 said “It was sold to Eidsiva for a very, very bad price. Low price.” Community member 4 stated, “We talk about economic corruption; we cannot say it so strongly. My opinion it was kind of a friendship corruption between some people in the community and Eidsiva.”

In contrast, the mayor called the complaints and ensuing investigation a political play from those opposed.

### **4.3.2 Lack of Trust in the Proponent**

#### ***4.3.2.1 Poor Reputation***

One individual who was interviewed stated that Eidsiva had poor a reputation among local residents. Some of the concerns were that the company’s rates for electricity were too expensive and their broadband service is unreliable. In contrast, others such as the mayor viewed the company as competent. Eidsiva addressed these issues in the interview, stating that every time they tried to act in a just way, those opposed to the development saw it as a bribe. Two community members stated that Eidsiva tried to look friendly through the EIA. The vice-mayor stated (talking about the mayor), “We know that we disagree about the location of this plant but we also have a disagreement about

Eidsiva company.” This comment was made in regard to the differences in views between the mayor and the vice mayor in their views on the company.

#### ***4.3.2.2 Proposal Revisions***

The original proposal for the Eidsiva plant included steam production, which was supposed to be used to create energy for an industrial complex located near the plant (Eidsiva, 2011; EFTA Surveillance Authority, 2012). Further, the location for this plant was determined in part because it would have enabled steam production to be financially viable. However, the Eidsiva project manager reported that falling energy prices is what prevented steam production from becoming a reality.

The current city planner confirmed the importance of potential steam production in the location decision for the plant. However, for three out of four community members interviewed, the steam component never seemed realistic, and for one community member the company’s promise to produce steam was dishonest.

Community member 3 said, “. I think they could have been honest....That what we said from the first time, this was bullshit. This is not going to happen, they were supposed to produce steam for a place, but that place is producing steam themselves cheaper than Eidsiva could do it. This we knew and still Eidsiva said the plant must be here because in the future we are going to produce steam. It’s never going to happen, never.”

The representative from Eidsiva mentioned that the steam issue added fuel to the existing conflict.

“The one thing that did put a restraint on the placement was that we tried to build it very close to an existing industrial complex where it would supply steam through pipelines of high pressure ..... It came to the point where if it was too far away it would be economically infeasible to build.”

“..... so in retrospect it might have been better to put the plant elsewhere but then it probably would not have been built or have been delayed for another 10



years”. “But given what we knew and the idea that we wanted the district heating system, I believe this was the best site.”

### **4.3.3 Health Impacts**

With the introduction of the Eidsiva plant in the center of the city, there were some concerns over the emissions from the plant (Figure 2). One community member was concerned that the top of the smoke stack was at a similar level as nearby houses. One other community member stated that there were concerns that in the future, the levels emitted could pose a health risk as they were not confident in the current science. A government health official was against this location, which could have caused some people to fear the impacts on their health. The two community members living in the area around the plant did not make a statement about their concerns on air pollution. Government Official 2 stated that, “In the smoke from the chimney, its poison but it’s below the limits that they are allowed but still people are anxious because this could be zero.”

A consultant was used to predict and interpret the results of the project’s health impact assessment. Those in favor of the project trusted the information provided by the consultant, and believed that the impacts would not be dangerous to the community. Two individuals in favor explained that they found it difficult to understand why those against the project did not believe the science. Government official 1 said, “I don’t know why. I believe in science. Distrust to science: Norway is coming like The United States, they believe in the Bible and creation.”

While the government official 2 believed that there were people who were sincerely concerned for their health, the Eidsiva project manager viewed the pollution as

something that was used to support arguments over the location of the plant, “The main problem was sort of a not in my back yard [approach] because if you look at the air pollution aspect was more used as an alternative motive”

Figure 2: View of Eidsiva Smokestack from a Nearby Neighborhood (October 12, 2017).



#### 4.3.4 Social and Economic Impacts

##### 4.3.4.1 *Constraints on University Expansion*

Three out of the four community members stated that they were not supportive of the plant’s location because it could prevent the expansion of The Norwegian University of Science and Technology (NTNU), which is located adjacent to the plant (Figure 4). In contrast, Eidsiva’s representative noted that this location was beneficial for the university because it created opportunities for information exchange and collaboration between the plant and the university. Community member 3 said, “I think the main issue is the location, to replace the oil-based heating in Gjøvik with hot water is a good thing. It’s a good thing for the air in this area, there wasn’t any arguments against the plant by itself,

but where it should be placed. The plant is impressive but that hasn't changed that it is in the wrong place." Community member 1 said, "The cost of this area is very, very important for the university."

Figure 3: View of Eidsiva Plant from NTNU University (October, 12, 2017).



#### ***4.3.4.2 Reduced Property Values***

The former city planner, mayor and the Eidsiva representative identified the issue of loss of property values as an issue that resulted in conflict, although this was not a concern brought up by any of the people who were against the location, including people living near the plant.

#### ***4.3.4.3 Increased Garbage Fees***

All community members who were interviewed expressed concerns that the plant would result in increased costs for citizens for garbage removal. Community Member 1 said, "Gjøvik municipality and other cities and municipalities around here have to pay a lot to

export the garbage and Eidsiva's price grabs you by the neck." Community member 3 said, "We have to pay more to get rid of our garbage."

#### ***4.3.4.4 Increased Power Prices***

One individual stated that he was concerned for future power prices because Norway has a plan to connect to the rest of the EU to supply green energy. As prices in other locations in Europe are higher, his concern was that electricity charges would increase.

#### **4.3.5 Process Deficiencies**

##### ***4.3.5.1 Poor Access to Information***

Everyone interviewed agreed that there was an attempt made to share information about the project. Information was distributed through open meetings, hearings, the internet, documents made available at city hall, and documents sent through mail. As well, citizens had the opportunity to schedule meetings with politicians. However, some people had concerns about how effective access to information was.

The current city planner identified that the documents in relation to the project were technical, not easy to understand, and very time consuming to read. He mentioned that it was even difficult for a city planner to understand. While there was some effort to mitigate this through the creation of smaller documents, the current city planner said they still contained very difficult language to understand. Another government worker identified that the information regarding air pollution was very difficult to understand. To help mitigate this problem, external assistance was brought in to explain the emissions. The mayor however, thought that those efforts made no difference in reducing public opposition to the project.

One community member 3 felt that a lot of information on the project was not provided because public debate often resulted in previously undisclosed information coming forward. This person as well as two other community members believed there was key information off the record. Community Member 1 said, “We thought this was very unacceptable because it was not good communication and it was very problematic to dig into the municipality archives to get the right information back to the people around here”.

#### ***4.3.5.2 Lack of Transparency***

Two community members identified the EIA process as not being transparent. When talking about the lack of transparency, both individuals referred to the land price issue noted in section 4.2. Both of them also discussed that they felt the economic predictions for the development were not accurate, such as the actual cost for other locations. Community member 2 said, “We wanted to have the truth and nothing but the truth but we didn’t... The numbers were manipulated to make it look like the chosen site was better.” Community member 3 said, “I think that we have a good system the problem is when it is not an open process. When it is not transparent. This process was not transparent. That is a key word I think.” Government official 1 said, “Not all was shared with the public. I shared everything in accordance to law”.

#### **4.4 Objective 2: Procedures that Prevented or Solved Conflict**

For my second objective I have identified two primary and several secondary themes. The secondary themes are, again, are noted in italics.

#### **4.4.1 Proponent Involvement**

##### ***4.4.1.1 Thorough and Proper EIA***

The current city planner identified that the actual impacts were not what the community expected them to be. The Eidsiva representative and the mayor stated that some of the conflict ended as a result of the project going through and the community members realized that some of the impacts they were expecting did not happen.

Community member 3, who was opposed to the project stated, “I think the environmental impacts were covered very well”.

##### ***4.4.1.2 Overall Good Project***

While some components of the project were a source of conflict, the project as a whole was not opposed by anyone interviewed. The overall impact of the project on the community was seen as positive. As stated by the vice-mayor, “I think the main issue is the location, to replace the oil-based heating in Gjøvik with hot water is a good thing. It’s a good thing for the air in this area, there weren’t any arguments against the plant by itself, but where it should be placed.” The mayor included that “The chimney will replace heating with oil in very many businesses in the city and that is cleaning the air dramatically”.

#### **4.4.2 Government Involvement**

##### ***4.4.2.1 Good Environmental Regulations***

Norway is required to follow both their own regulations as well as those from the EU. Complying with environmental regulations is extremely important as companies that are not compliant will receive harsh penalties and will have their name published. As stated by the Eidsiva representative, “I would say in general that Norwegian environmental laws are good. I mean they are working as intended. Working for the people.”. Similarly, the mayor said “There are strong regulations that prevent excessive

amounts of pollution coming out of Eidsiva. If Eidsiva did not follow environmental regulations, they would lose their concession to continue heating.”

#### ***4.4.2.2 Trust in Government***

Those who discussed Norway’s democratic system were happy with the country’s political institutions. All the participants who responded when asked the question “Are there any people or organizations that should have more say in the final [EIA] decision?”, were not able to identify any other person or organization that they thought should have more political power. Respondents believed their political system was fine the way that it was. Those interviewed demonstrated a high level of respect for, and trust in, their government. Community member 1 responded, “No, it is okay as is”. Community member 3 answered, “I think that the ordinary people and inhabitants in our community must have influence on parties, but the decision making must be in the city council. It’s the representative of the person.” The mayor noted that, “You can disagree. If you want to have a democratic system you have to accept that people are doing these decisions can be elected or re-elected.”

#### ***4.4.2.3 Political System***

The Gjøvik municipality board is made up of 45 voting members representing nine political parties. While certain parties are tied to certain values, all party members vote as a bloc. No parties are continually in opposition to the ruling party. Parties become allies and form opposition depending on the matter and vote at hand. The vote on the Eidsiva plant was 23 for the project and 22 against. While this was a very heated topic at the time and involved lots of conflict, those in opposition to the project have before and since come together as allies when voting on other projects. As explained by the vice-mayor, “It changes from matter to matter. It is interesting with local politics because the

consequences of national politics on local society are always developing and the parties take different positions, so your alliances change all the time with, different subjects. That's one of the interesting things about politics. You don't have one front there and one front there always clashing".

In the Eidsiva vote, the current mayor and vice-mayor were in opposition. The mayor supported the development after the Daimyo-Rindi plant was no longer an option. The vice-mayor was not in support of the Eidsiva plant in the current location. While there was disagreement between the mayor and the vice-mayor regarding this issue, they both pointed out that there were many things that they agreed on. The vice-mayor explained, "On very many other things the mayor and I agree. That's one of the reasons why we have very good cooperation. We work together in a good way." The mayor had a similar comment, "I think that is no problem today because we put it behind us now because there are new challenges now, just new problems to solve and we have accepted the different points of view in this specific question."

While the mayor and the vice-mayor had opposing views on the project, they were able to work together after accepting the final decision. The vice-mayor identified that, "The ultimate goal is to develop this community in a good way for the inhabitants and take positions that most of the inhabitants agree about. And to have solutions within the management of the community and not private companies."



## **5. DISCUSSION**

### **5.1 Objective 1: Methods and Procedures that Resulted in Conflict**

#### **5.1.1 EIA Good Practice**

Certain components of the Eidsiva EIA were completed in line with several of the IAIA's (1999) principles of good practice, which are identified in Table 1. The EIA demonstrated good practice in regard to environmental and health impacts of the air pollution by being rigorous, participative, adaptive and credible. This component of the assessment demonstrated rigor through the use of experts on air pollution and the health impacts that could result. Further, being participative resulted in adaptations being made to the pollution limits permitted for the plant. These were reflected in the approvals and permits required to operate and this enhanced the credibility of the EIA.

It is also important to that the air pollution was not a major cause of long-lasting conflict. While most government officials and those supporting the development talked a lot about the concern for air pollution, as did some members of the public, air pollution was not a main concern identified by those opposing the development. Among those who were against the development, there were some people who had concerns, however, the way this aspect of the EIA was implemented seemed to mitigate their concerns as well as the conflict that could have resulted.

**Table 1:** EIA Principles of Best Practice Relevant to the Eidsiva Development in Gjøvik (IAIA, 1999; Hanna, 2009).

Principles	Definition	Implementation
Rigorous	The process should apply “best practicable” science, employing methodologies and techniques appropriate to address the problems being investigated.	The pollution limits were permitted by and monitored through an external body most participants viewed as trustworthy.
Adaptive	The process should be adjusted to the realities, issues and circumstances of the proposals under review without compromising the integrity of the process, and be iterative, incorporating lessons learned throughout the proposal's life cycle.	The initial pollution limits were changed in response to those in opposition to the development.
Participative	The process should provide appropriate opportunities to inform and involve the interested and affected publics, and their inputs and concerns should be addressed explicitly in the documentation and decision making.	Those who were opposed to the development were able to participate in a meaningful way, as demonstrated by the change in pollution limits.
Credible	The process should be carried out with professionalism, rigor, fairness, objectivity, impartiality and balance, and be subject to independent checks and verification.	Permits from a federal regulatory body on pollution limits and evaluation from environmental officers demonstrates credibility.
Transparent	The process should have clear, easily understood requirements for EIA content; ensure public access to information; identify the factors that are to be taken into account in decision making; and acknowledge limitations and difficulties.	Even with the complexities of the pollution, most participants were able to identify that they understood the impacts.

### 5.1.2 EIA Good Practice Shortfalls

While there were some aspects of the Eidsiva EIA that were in line with the IAIA’s (1999) principles of good practice, there were some that were not. The largest source of conflict identified by those who were against the development related to the project’s location. Conflict arose from sale of the land, the steam proposal that did not

follow through, estimates of development costs as well as lost opportunities to use the land for other purposes. The high level of conflict in regard to the location can be linked to a lack of good practice.

While this EIA has demonstrated some aspects of a participative approach, as explained above, when it came to the main source of conflict (location), this seemed to change. During public participation in regard to location, some individuals opposed to the project said they were not given the chance to participate in a meaningful way.

Lack of transparency played a major role in the development of the conflict in relation to the location. This is discussed in section 4.3.5.2. Further, the lack of transparency resulted in a lack of credibility. Credibility was also lost because the control system was not to evaluate government procedures that reviewed the costs for Eidsiva, which led to some opposed the project to believing that the numbers were not accurate.

### **5.1.3 EIA Good Practice and Conflict**

Through examining the differences between the air pollution and the location impacts, one can see the differences in how conflict was avoided and resolved. The air pollution should have been a major concern as pollution can have severe impacts on human health (although this was not the case in this project, as appraised by a well trusted organization). This suggests the efficacy following the best practice guidelines for preventing or resolving conflicts over serious impacts.

Regarding the location, conflict started as a result of differences in interests and beliefs on the best way to move forward (Dorcey, 1986) with the project. Methods and procedures that were not consistent with of the principles of good practice seemed to

intensify and exacerbate the conflict. That is, lack of transparency and credibility contributed to the intensity and length of the conflict in this case.

#### **5.1.4 Types of Conflict**

As introduced in section 2.3.3, Dorsey (1986) identified four types of conflict often present in resource and environmental management, and it is common for more than one type of conflict to be present in EIA (Mitchell, 2002; 2015). In this assessment, all four types: value, interest, behavioral and cognitive were identified.

Cognitive conflict can be seen in the different understandings regarding air pollution (section 4.3.3) and land value determination (section 4.3.4). Behavioral conflict was identified in an interview that expressed that the Eidsiva company was not viewed as competent (section 4.3.2.1). Value conflict was seen in the concerns expressed by community members over the loss of land for university expansion. Interest conflict was part of the economic disagreements noted in section 4.3.4. Understanding the types of conflict and why the conflict exists is important because it can help identify of appropriate approaches to conflict resolution.

### **5.2 Objective 2: Procedures that Prevented or Solved Conflict**

#### ***5.2.1 Positive Aspects of Conflict***

While conflict is often viewed as negative and it had the ability to negatively impact the EIA process, there are situations where conflict can become of value to an EIA. Although not a research objective, this study demonstrates how identifying and resolving conflict can have a positive impact on the project. Conflict that resulted from concerns over air pollution from the project, resulted in further investigation, which ultimately resulted in the pollution limits changing on Eidsiva's permit. The vice-mayor stated "For the first approval to build the plant, there were some limits on the pollutions

and they protested to the county that this wasn't good enough. So, they had another look at it and they got stricter standards to clean the smoke." How the conflict was resolved provides a good example of how applying good practice (being participative) produced a more effective and legitimate EIA, which led to a better development for the community.

### ***5.2.2 Overall Good Development for the Community***

While there were differences in opinions on how the project should go through, none of the interview participants identified that they were against the bioenergy plant for the Gjøvik Municipality. The project brought many benefits to the community, and most people interviewed understood this and seemed to accept the costs of this project in exchange for receiving the benefits.

### ***5.2.3 Respect for Government***

Throughout the interviews, all participants demonstrated a high level of respect for and trust in the government. Those opposed to some aspects of the project were still in support of the government system, even after the development moved forward in a way that was not to their liking. As discussed in section 4.2.1, those interviewed trusted in the government's decision-making authority. This could be partly explained by the existence and accessibility of the control system, a branch of government that conducts investigations to ensure that proper decision-making procedures are followed. These investigations allow for trust that the government will act in a way that is in the best interests of or a community or the broader public. This overall level of trust in, and respect for government seems to differ slightly from Canadians' general outlook towards government, which tends to be sceptical (Chipman & Colbert, 2017).

#### ***5.2.4 Inter-Government Relations***

The Municipality vote for this project was one that split the 45 voting members nearly in half: 23 for the project 22 against. (This is further discussed in section 4.4.2.3). This situation is noteworthy as individuals within government parties do not consider themselves in opposition to other parties. Parties become allies or opposition depending on the vote at hand. While there was great disagreement over the Eidsiva development, conflict settled shortly after among the voting members, as some of those in opposition became allies in the next vote.

## 6. CONCLUSION

Conflict in environmental impact assessment (EIA) is common, as demonstrated in this case study. All four types of conflict (cognitive, behavioural, interest and value) identified by Dorsey (1986) were present in this case. Despite the prevalence of this conflict, several factors led to its resolution and positive use.

Strict Norwegian environmental legislation played a role in creating trust in the EIA process and helped limit the conflict seen in the case. Further, the political system in Gjøvik allowed for conflict to become a constructive component of decision making, and ultimately resulted in positive post development relationships among stakeholders. Additionally, the political system embraced and resolved conflict, ultimately leading to a more effective EIA process. For example, investigations by government authorities of potential conflicts of interest and allegations of corruption contributed to the credibility of the EIA. Perhaps most importantly, the public and political leaders had a high level of respect for their political system, which led to acceptance of the decision-making process, ultimately reducing conflict.

The bioenergy plant brought great benefits to the community and was helpful for Gjøvik achieving its climate change mitigation goals. The assessment work done by the proponent resulted in accurate impact prediction, which helped settle conflict over the nature of the EIA.

While conflict can be negative, good practice in EIA can help ensure that conflict is not left unresolved. In this case, several components of good EIA practice led to the conflict resolution and demonstrated the positive implications of identifying and resolving conflict.

There were some aspects of this assessment that were completed with several elements of good practice, however, there was also room for improvement on some components of this EIA. While there was an attempt to ensure that information was accessible to those who were interested, this is an area of the assessment that could have been improved. It was mentioned throughout the interviews that information on the case was difficult to access and was not easily understood from the documents provided. Several interviewees explained that there were key components of the project that were not shared with the public, which threatened the transparency of the process. In the future, a more open approach with thorough explanations of why and how components of the project were determined would be beneficial for those living in the affected communities, and may ultimately lower the conflict that often results from new developments. In this case study, a more open approach might have helped mitigate some of the more contentious issues that arose, such as the municipality's ownership shares in the proponent, the change in the proponent, controversy over the value of the project site, and lack of steam production from the plant.

To build on this research, a more in-depth look at how political processes and EIA procedures impact developments is called for, including how such processes and procedures create conflict and help in conflict resolution. The high level of respect for the government seen in this case study and the unique political dynamics in the community played important roles in resolving conflict in the case and reinforcing positive post-EIA relationships. A comparison of similar projects in different countries would provide an opportunity to further evaluate the role played by political and regulatory systems in creating and resolving conflict.



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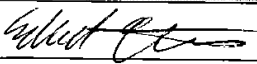
## Appendix A – Interview Questions

1. What was your role in the EA?
2. Are you personally affected by the project?
3. Which location were you in favor of? Why?
4. How accessible was EA information to you and was it easy to understand?
5. Did you feel the EA process was fair to participants and those affected? If not, why?
6. Who or what had considerable decision-making influence i.e. specific individuals, class, organizations, proponent? Why?
7. Are there any people or organizations that should have more say in the final decision?
8. Are laws strong enough to deter behaviors that are damaging to the environment and/ or communities?
9. What issues resulted in conflict? Why? When did they arise? [PROBE: Until EA phase is identified.]
10. Was the conflict resolved? If so, how? [PROBE: Was external assistance brought in?] If not, why not?
11. Is any of this conflict still ongoing? Why?
12. Does any of it relate to project follow up activities such as monitoring and changes to mitigation measures?

## Appendix B- Ethics Approval Form

### DEPARTMENTAL ETHICS COMMITTEE (DEC) REVIEW (For Committee use only)

**Researchers – Please attach a PDF of the signed form to your WebGrants application**

<b>Review</b> (Check all that apply)	
<b>PRINCIPAL INVESTIGATOR:</b> <u>Dr. Alan Diduck. Student: Shannon Gantner</u>	
<b>PROJECT TITLE:</b> <u>Conflict prevention and resolution in environmental assessment: A study on the development of the Gjovik Eidsiva Plant</u>	
<input checked="" type="checkbox"/> The DEC has reviewed this submission to ensure completeness.	
<input checked="" type="checkbox"/> This submission appears to comply with <i>Policies and Procedures</i> , the Tri-Council Policy, and relevant disciplinary ethics guidelines.	
<input checked="" type="checkbox"/> All relevant ethical issues appear to have been addressed in this submission.	
<input type="checkbox"/> We recommend the following conditions of approval (regarding methods, monitoring, reporting, and/or ongoing review):	
<b>Approval Recommendations</b> <i>Note: Unless otherwise recommended above, approval is in effect for one year only.</i>	
<input checked="" type="checkbox"/> We <b>approve</b> of the procedures proposed in this submission (subject to any conditions listed above).	
<input type="checkbox"/> We <b>do not approve</b> of the procedures proposed in this submission.	
<b>Type of Review Recommended – Please note, Delegated Review applies to minimal-risk applications only</b>	
<input checked="" type="checkbox"/> The investigator has requested Delegated Review, and we <b>recommend Delegated Review</b> .	
<input type="checkbox"/> The investigator has requested Delegated Review, but we <b>do not recommend Delegated Review</b> .	
<input type="checkbox"/> We <b>recommend Full Review</b> .	
<b>Additional Comments</b> (optional)	
<b>DEC Student Ethics Approval</b> (DEC approval of student <b>Delegated Review</b> submission)	
<input checked="" type="checkbox"/> The student Delegated Review submission has been approved.	
<b>Print/type name Departmental Ethics Committee Chair:</b>	<b>Department:</b>
EDWARD CLOUTIS	GEOGRAPHY
<b>Signature of Departmental Ethics Committee Chair:</b>	<b>Date:</b>
	Oct. 4, 2017