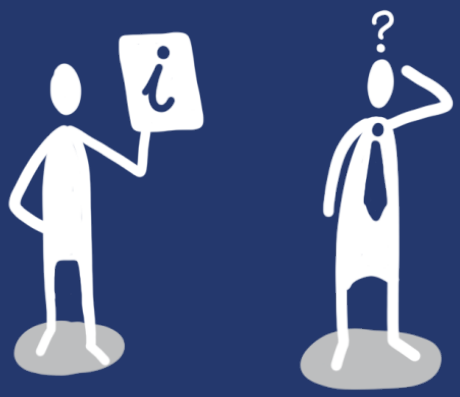
TRAINING COURSE

The PRACTICE of INFORMING POLICY through EVIDENCE



- Simulation Game: Round 2 -

Name:

Simulation Game: Round 2

Note: all data provided for this exercise are fictive and do not reflect reality in the field

Role 1: Minister of Energy

Round 2

Your role

The situation has changed dramatically, since the previous meeting. You have granted Drilling & Co concessions to start exploratory drillings. Some of the evidence that you used to grant them, now is contested by concerned citizens, other experts, and local authorities.

In this round, you will be chairing a meeting, which is held at the Flat City town hall. Present at the meeting are citizens, the mayors of Flat City and Boxing Town, representatives of the Ministry, and experts with divergent views.

The purpose of the meeting is to share concerns, clarify uncertainties and initiate constructive dialogue.

At the end of the meeting you must present a clear idea of how to proceed with this complicated dossier.

Preparation

First, think of an opening statement: how will you address those present? What will you be asking them?

Then, ask yourself how you would like to end this discussion. Consider these issues:

- Which policy problem is at stake here?
- Do you have sufficient evidence at hand to address this policy problem?
- What will you do next?

Remember: your senior policy officer, your political advisor, your science advisor, and the experts of UIT are all present to help you in assessing your needs, answer questions, and point to uncertainties.

Role 2: Senior Policy Officer, Ministry of Energy

Round 2

Your role

The situation has changed dramatically, since the previous meeting. Drilling & Co has been concessions to start exploratory drillings. Some of the evidence that was used to grant them, now is contested by concerned citizens, other experts, and local authorities.

In this round, the minister will be chairing a meeting, which is held at the Flat City town hall. Present at the meeting are citizens, the mayors of Flat City and Boxing Town, and experts with divergent views.

The purpose of the meeting is to share concerns, clarify uncertainties and initiate constructive dialogue.

Preparation

Together with the Minister's political and science advisors, you are here to support the Minister.

At the end of this meeting, the Minister has to have a clear idea of how to proceed with this complex dossier. You can help him/her, by summarizing the claims that have been made by those present at this meeting. What values do the different stakeholders represent? What policy problem(s) are at stake here?

Role 3: Minister’s political advisor

Round 2

Your role

The situation has changed dramatically, since the previous meeting. Drilling & Co has been concessions to start exploratory drillings. Some of the evidence that was used to grant them, now is contested by concerned citizens, other experts, and local authorities.

In this round, the minister will be chairing a meeting, which is held at the Flat City town hall. Present at the meeting are citizens, the mayors of Flat City and Boxing Town, and experts with divergent views.

The purpose of the meeting is to share concerns, clarify uncertainties and initiate constructive dialogue.

Preparation

Together with the Senior Policy Officer from the Ministry of Energy and the Minister's science advisor, you are here to support the Minister.

At the end of this meeting, the Minister has to have a clear idea of how to proceed with this complex dossier. You can help him/her, by summarizing the claims that have been made by those present at this meeting. What values do the different stakeholders represent? What do they have at stake? What policy problem(s) are at stake here?

Role 4: Minister’s science advisor

Round 2

Your role

The situation has changed dramatically, since the previous meeting. Drilling & Co has been concessions to start exploratory drillings. Some of the evidence that was used to grant them, now is contested by concerned citizens, other experts, and local authorities.

In this round, the minister will be chairing a meeting, which is held at the Flat City town hall. Present at the meeting are citizens, the mayors of Flat City and Boxing Town, and experts with divergent views.

The purpose of the meeting is to share concerns, clarify uncertainties and initiate constructive dialogue.

Preparation

Together with the Senior Policy Officer from the Ministry of Energy and the Minister's political advisor, you are here to support the Minister.

At the end of this meeting, the Minister has to have a clear idea of how to proceed with this complex dossier. You can help him/her, by summarizing the claims that have been made by those present at this meeting. What values do the different stakeholders represent? What different types of evidence have been presented and how trustworthy is the evidence? What policy problem(s) are at stake here?

Role 5: UIT expert on impact on groundwater

Round 2

Your role

You are an expert. Therefore, you will have to answer questions, in a concise and comprehensible way.

Preparation

However, your expertise may be contested. If so, how will you stand up for your evidence? Bear in mind that the UIT is a government laboratory.

Role 6: UIT expert on shale gas estimates

Round 2

Your role

You are an expert. Therefore, you will have to answer questions, in a concise and comprehensible way.

Preparation

However, your expertise may be contested. If so, how will you stand up for your evidence? Bear in mind that the UIT is a government laboratory.

Role 7: Drilling & co Chief scientist

Round 2

Your role

Your objective is that the Minister allows the continuation of exploration and ultimately drilling on a commercial basis.

You know that shale gas in general and Drilling & co's operations in particular are criticised on several grounds, including:

- Seismic risks
- Noise and other nuisances to neighbours
- Groundwater contamination
- Climate impact of fossil fuels
- Costs

The methodologies used by Drilling and co to assess the risks are under attack.

In particular, Drilling & Co’s methodology for predicting and avoiding earthquakes is being criticized by one of the parties present at this meeting.

Preparation

How do you respond to these critiques?

How do you respond to stakeholders' reluctance towards fracking?

How do you argue for the continuation of exploration and exploitation by Drilling & co in Urland?

Role 8: Expert on economic impacts of shale gas

Round 2

Your role

The Minister wants you to be present during this meeting. He/she expects you to assist him/her, when (technical) expertise is needed. This means you also need to point to uncertainties, if necessary.

It is expected that you are capable of presenting the required evidence in a condensed and comprehensible manner.

Role 9: Mayor of Boxing Town

Your role

You have taken note of the technical processes involved in hydraulic fracking and the environmental risks associated with them. You have read some of the expert information produced by Drilling & Co and the Urland Institute of Technology.

You were struck by the very general nature of this information. Moreover, you noticed that most of it is based on research and experience in the Unites States – it is unclear whether it applies to Boxing Town and to what extent.

You know, for example, that Boxing Town is located near the *Feldbiss* fault line. In the past, seismic activities have been attributed to this fault line. Residents of Boxing Town are still anxious about these tremors.

Drilling & Co claims that the distance between the proposed drilling location and the fault line is far enough to exclude the risk of induced earthquakes. But you are not convinced – nor are the residents of Boxing Town.

Moreover, the proposed drilling site is located in the vicinity of a densely populated residential area. You share the residents' concern about noise pollution as a result of drilling activities – especially as Boxing Town is well known for its quiet, natural surroundings, attracting tourists for precisely this reason.

Finally, Boxing Town has recently developed ambitious plans to become one of Urland's most sustainable villages – an ambition that fits seamlessly with its bucolic image. Its past policies have focussed intensely on renewable energy sources, such as wind, solar, and biomass. Shale gas exploitation is not compatible with these ambitions and might severely damage Boxing Town's reputation as a progressive, nature-loving, "green" village.

Your claim

The Minister should withdraw his decision to grant the concessions. Whether proven safe or not, there will never be exploratory drillings near Boxing Town, by Drilling & Co or any other company. You support the 'Frack out' movement within Boxing Town.

Your potential ally

The mayor of Flat City (since he/she is a colleague of yours) – but bear in mind: his/her point of view does not necessarily resemble yours.

Role 10: Mayor of Flat City

Your role

The Minister of Energy ruled that Drilling & Co's application for concessions to start exploratory drillings falls within the context of the existing regulatory regime and current mining legislation. According to this framework, the procedure for granting concessions takes place at national policy level. The Minister's decision was therefore taken at that level, and local authorities were not consulted during the process.

You object to the Minister's interpretation of the regulatory context. You think that current mining legislation is not the appropriate framework in which to assess concessions for shale gas, for two reasons:

- shale gas is an unconventional fossil fuel (but has not been recognised as such);
- too little is known about the risks and consequences of its exploitation for the local environment.

In your opinion, the Minister's interpretation of shale gas as a conventional fossil fuel is wrong.

Moreover, you think that the decision to grant the concessions was based on insufficient knowledge of the local context. There was no attempt at all to align the intended drilling activities with those already taking place. For example, Flat City recently developed plans for the extraction of natural gas. How the two plans affect each other is entirely unclear.

You are convinced that local authorities should have been consulted on the decision to grant the concessions – because it is on their property that the exploratory drillings will take place, and it is the local community that will be affected most.

Your claim

The minister should reconsider his decision to grant the concessions. He/she should start a new procedure, in which local authorities (eg the municipality of Flat City) are also consulted. It is imperative that current plans are integrated into future ones, in order to ensure a profitable strategy.

Your potential ally:

The mayor of Boxing Town (since he/she is your colleague) - but bear in mind: his/her point of view does not necessarily resemble yours.

Role 11: General Manager, Flat City Chamber of Commerce

Your role

You are the General Manager of the Chamber of Commerce in Flat City. You know Flat City very well; you were born there.

Most of its inhabitants are commuters, and economic growth in Flat City is therefore low to moderate. Most residents only live in Flat City for a few years, before moving on to other, more attractive dwelling sites. That leads to a lack of social cohesion within the community. With the exception of a thriving bridge club, there are not many social organisations, sport clubs or voluntary associations. In the day time, most streets are deserted, while in the evenings, all available parking spaces are occupied.

You know that small and medium enterprises (SMEs) in Flat City could play a considerable role in supporting regional development. You also know they are a driving force behind any kind of growth and the creation of new jobs. The arrival of a new kind of industry might give them – and Flat City – the boost they so desperately need.

Shale gas therefore offers wonderful opportunities, in your opinion.

It might help small and medium enterprises to provide jobs for the future. It might stimulate economic growth. It might change Flat City.

Your claim

You support the arrival of Drilling & Co.

Your potential ally

The mayor of Flat City – he/she is receptive to the argument that shale gas exploitation could lead to the creation of new jobs and the stimulation of economic growth.

Role 12: Bank manager, Urland Central Bank

Your role

You are the bank manager of Urland Central Bank, one of Urland's most profitable financial institutions. A few years ago, UCB invested over 100 million Uri in the construction of a brand new centre for data processing and storage. It is located in Boxing Town, next to one of Drilling & Co's intended drilling sites.

UCB chose to construct this building in Boxing Town after careful consideration, consulting many specialists in the process. UCB finally settled on this particular location because it fulfilled the stringent safety standards required for a centre of this type to operate properly.

At the time, Urland's Ministry of Finance emphasised the importance of the new centre for data processing and storage, as it would reinforce the status of Urland as an important player in the increasingly globalised financial world, and stimulate employment in Urland's banking industry.

Exploratory drillings in Boxing Town could have huge consequences for your banking business. Drillings might induce earthquakes. They might also lead to ground water pollution, which would hinder the proper functioning of the centre's heating system. This, in turn, could have enormous consequences for international payment transactions processed at the centre. In other words: global investments and international trade could be seriously disrupted as a result of the exploratory drillings – possibly even leading to international conflicts.

Your claim

You fiercely object to Drilling & Co's plans to start exploratory drillings in Boxing Town.

Your potential ally

The professor of economy at the University of Applied Sciences in a town near Boxing Town. He/she confirms your suspicions that shale gas drillings do actually induce earthquakes.

Role 13: Citizen worried about the impact of drilling on the quality of life in Boxing Town

Your role

You are the owner of 'The Happy Owl', a flourishing local pub in Boxing Town. In recent months you have overheard a lot of stories about exploratory drillings and Drilling & Co.

One evening, one of your customers described, for example, how in the US, Drilling & Co repeatedly trespassed on local inhabitants' private land for the purpose of carrying out geological surveys at exploration areas. The company allegedly used explosives and "lorry-mounted ground vibrators" to test the geological layers beneath the surface of its exploration area. In one instance, contractors working for Drilling & Co reportedly marked a private site for detonation of explosive charges to carry out exploration works. Also, damage to private property was reported following explosions set off on a neighbouring property.

Another customer, also present that night, immediately added stories about residents who were not informed about the timing of drilling operations at Drilling & Co's nearby site. They often felt movements of heavy machinery in the early morning hours and mud trails were left behind in their village by Drilling & Co's trucks.

A third one knew that Drilling & Co actually breached the allowed limits for noise disturbance at its drilling sites. The noise level monitoring report by the company showed levels which were higher than the maximum values at the site, although Drilling & Co's report suggested that the noise was not produced by the company's drilling activities but rather by "other local activity".

The next evening, a customer said he had found a website on which residents living near Drilling & Co's exploration or production sites had submitted their complaints. The list of grievances gave a clear idea of the issues local residents were faced with due to Drilling & Co's operations. They included the following:

- Frequent minor tremors several times a week;
- Cracks appearing in walls, patios and the plasterwork of houses;
- Sewers and mains collapsing (and hence water being temporarily cut off) due to drilling and fracking;
- Heavy machinery and vehicles being driven through municipalities at night or in the early morning hours;
- Vehicles being parked without permission on private property around the rig site;
- Exploration works starting without proper notice;
- Noise disturbance "day and night".

Your claim

You are seriously worried that exploratory drillings will damage the quality of life in Boxing Town. You want to know what will be done to prevent this from happening.

Role 14: Citizen concerned about the risk of contaminated drinking water

Your role

You are a senior citizen living in Flat City. You retired five years ago from your job as a senior researcher at a foreign NGO, *the Outland Environment Research & Policy Centre*. You know that in the United States, fracking has polluted both groundwater and surface waterways such as rivers, lakes and streams.

Looking for more information, you consulted the internet. You found a report published in October 2013,[1] which confirms your concerns that fracking can lead to contamination of drinking water. You have brought a copy with you.

Your claim

Fracking pollutes both groundwater and surface waterways. Whatever experts say, the risk of contaminated water as a result of fracking is substantial. You want the Minister to withdraw the concessions.

Contaminating Drinking Water

Fracking pollution can enter our waters at several points in the process—including leaks and spills of fracking fluid, well blowouts, the escape of methane and other contaminants from the well bore into groundwater, and the long-term migration of contaminants underground. Handling of toxic fracking waste that returns to the surface once a well has been fracked presents more opportunities for contamination of drinking water. State data confirm more than 1,000 cases of water contaminated by dirty drilling operations.

Spills and Leaks of Fracking Fluids

Toxic substances in fracking chemicals and wastewater have been linked to a variety of negative health effects on humans and fish. Chemical components of fracking fluids, for example, have been linked to cancer, endocrine disruption and neurological and immune system problems. Wastewater brought to the surface by drilling can contain substances such as volatile organic compounds with potential impacts on human health. There are many pathways by which fracking fluids can contaminate drinking water supplies. Spills from trucks, leaks from other surface equipment, and well blowouts can release polluted water to groundwater and surface water.

Migration of Contaminants

A recent study of contamination in drinking water wells in the Barnett Shale area of North Texas found arsenic, selenium and strontium at elevated levels in drinking water wells close to fracking sites. The researchers surmise that fracking has increased pollution in drinking water supplies by freeing

[1] *Fracking by the Numbers: Key Impacts of Dirty Drilling at the State and National Level, October 2013*
Written by:
Elizabeth Ridlington ~ Frontier Group
John Rumpler ~ Environment America Research & Policy Center

naturally available chemicals to move into groundwater at higher concentrations or through leaks from faulty well construction.

Toxic Fracking Waste

The wastewater produced from fracking wells contains pollutants both from fracking fluids and from natural sources underground. It returns to the surface in huge volumes—both as “flowback” immediately after fracking and “produced water” over a longer period while a well is producing oil or gas. Yet fracking operators have no safe, sustainable way of dealing with this toxic waste. The approaches that drilling companies have devised for dealing with wastewater can pollute waterways through several avenues.

Waste pits can fail.

In New Mexico, substances from oil and gas pits have contaminated groundwater at least 421 times. Moreover, waste pits also present hazards for nearby wildlife and livestock.

Role 15: Citizen worried about earthquakes and the economic effects on taxpayers

Your role

You are a professor of economy at the University of Applied Sciences in a town near Boxing Town. A few weeks ago, you met the bank manager of Urland Central Bank at the local Rotary Club. He/she shared his/her concerns about the risks that fracking poses to the environment, especially with regard to man-made earthquakes. You promised the bank manager that you would verify his/her suspicions with one of your colleagues at the Geological Faculty of your University. Yesterday, your colleague handed you a paper.

It confirms the bank manager's claim that fracking can indeed induce earthquakes. According to the paper:

"The number of earthquakes has increased dramatically over the past few years within the central and eastern United States. Nearly 450 earthquakes magnitude 3.0 and larger occurred in the four years from 2010-2013, over 100 per year on average, compared with an average rate of 20 earthquakes per year observed from 1970-2000. Scientists have found that at some locations the increase in seismicity coincides with the injection of wastewater in deep disposal wells. Much of this wastewater is a byproduct of oil and gas production and is routinely disposed of by injection into wells specifically designed for this purpose. Underground disposal of wastewater co-produced with oil and gas, enabled by hydraulic fracturing operations, has been linked to induced earthquakes."

Fracking wastewater volumes have increased dramatically since 2007, and the number of earthquakes in the central United States, where injection well disposal is common, has increased by more than 1,100 percent compared to earlier decades. Scientists at the U.S. Geological Survey have concluded that humans are likely the cause. One expert concluded that, "the risk of humans inducing large earthquakes from even small injection activities is probably higher" than previously thought.

In the meantime, you too have started to read about fracking and the risks associated with it. You learned some amazing facts about the costs that fracking imposes on taxpayers.

For example:

Ruining Roads, Straining Services

As a result of its heavy use of publicly available infrastructure and services, fracking imposes both immediate and long-term costs on taxpayers. The trucks required to deliver water to a single fracking well cause as much damage to roads as 3.5 million car journeys, putting massive stress on roadways and bridges not constructed to handle such volumes of heavy traffic.

Fracking also strains public services. In the US, increased heavy vehicle traffic has contributed to an increase in traffic accidents in drilling regions. At the same time, the influx of temporary workers that typically accompanies fracking puts pressure on housing supplies, thereby causing social dislocation. US governments have responded by increasing their spending on social services and subsidised housing, squeezing tax-funded budgets.

Risks to Local Businesses, Homeowners and Taxpayers

Fracking imposes damage on the environment, public health and public infrastructure, with significant economic costs, especially in the long run after the initial rush of drilling activity has ended. Other negative impacts on local economies include downward pressure on home values and harm to farms. Pollution, stigma and uncertainty about the future implications of fracking can depress the prices of nearby properties. In the US, homes valued at more than $250,000 and located within 1,000 feet of a well site lost 3 to 14 percent of their value.

Fracking also has the potential to affect agriculture, both directly through damage to livestock from exposure to fracking fluids, and indirectly through economic changes that undermine local agricultural economies. Fracking can increase the need for public investment in infrastructure and environmental clean-up. Fracking-related water demand may also lead to calls for increased public spending on water infrastructure.

The cost of cleaning up environmental damage from the current oil and gas boom may fall to taxpayers, as has happened with past booms.

Your claim

Taxpayers should be compensated for the effects of drilling.

Your potential ally

The bank manager of Urland Central Bank.

Role 16: Director of the Centre for Research on Multinational Corporations

The Centre for Research on Multinational Corporations (SOMO) is an independent, not-for-profit research and network organisation working on social, ecological and economic issues related to sustainable development. Since 1973, the organisation investigates multinational corporations and the consequences of their activities for people and the environment around the world.

Your role

You have been commissioned by Friends of the Earth – an independent NGO which advocates for sustainable development – to provide interested stakeholders and the general public with a fact-based profile and analysis of Drilling & Co, including the company's corporate social responsibility (CSR) performance as a corporate entity. It includes both a discussion of the company's CSR policies, as well as an overview of CSR-related risks present in the company's business or supply chain. The normative standards and recommendations established in the internationally-agreed OECD Guidelines for Multinational Enterprises provide a reference for selecting the CSR issues and a benchmark for assessing the company's performance.

These are your most important findings:

CSR policies and procedures

Drilling & Co does not publish an annual CSR report or address CSR issues in its periodic financial reports. In contradiction to the recommendations in the OECD Guidelines, the company does not have a publicly-available policy or procedures for systematic, risk-based due diligence. Drilling & Co does not make reference to any normative guidelines for responsible business conduct, nor is it a member of any international sustainability initiatives or multi-stakeholder groups.

Seismicity prediction methods and transparency

On 1 April 2011 and on 27 May 2011 two seismic events (earthquakes) of 2.3 Richter local magnitude (ML) and of 1.5 ML, respectively took place shortly after Drilling & Co's Preese Hall well was hydraulically fractured. Drilling & Co suspended its hydraulic fracturing operations at the site and commissioned a report to investigate the cause of the earthquakes. Urland's Committee of Energy also commissioned an independent report to determine the causes of the seismicity. Both reports attribute the two seismic events to Drilling & Co's fracturing operations. According to The Royal Society and The Royal Academy of Engineering, the cause of the Blackpool earthquake was the injection of fracking treatment water into the ground by the company: "The most likely cause of the events was the transmission of injected fluid to a nearby (but previously unidentified) pre-stressed fault, reducing the effective stress to the point where the fault slipped and released its stored energy. The energy released was several orders of magnitude greater than the microseismic energy associated with routine hydraulic fracturing."

Although the independent researchers in Committee's report do not call for a cessation of shale gas exploration activities at the Preese Hall site, they do criticise Drilling & Co's methodology of predicting and avoiding earthquakes in the future. The report critiques Drilling & Co's methods on several points, including:

- Probability of earthquakes. According to Drilling & Co's report, the probability of further earthquake activity is low. However, the Committee's researchers disagreed, noting, "We are not convinced by the projected low probability of other earthquakes during future treatments. We believe it is not possible to state categorically that no further earthquakes will be experienced during a similar treatment in a nearby well".
- Model predicting earthquakes. The Committee report also expresses concern about the method and models used by Drilling & Co to predict earthquakes. They explained, "We also consider that the use of the numerical simulations to estimate maximum likely magnitude of any further earthquake should be treated with some caution, mainly because the model [used by Drilling & Co] is necessarily simplistic due to lack of data to constrain parameters".
- Threshold for action in case of earthquakes. "We consider that the maximum magnitude threshold of 1.7 ML, initially proposed for the traffic light system, is undesirably high from the viewpoint of prudent conduct of future operations. Based on this limit, no action would have been taken before the magnitude 2.3 ML event on 1 April 2011. Instead, we recommend a lower limit of 0.5 ML".

Safety and environmental track record of Drilling & Co's chairman

Gerard Green, chairman of Drilling & Co and partner and managing director of Lakerock, was chief executive officer (CEO) of the Coland oil company CD between 1995 and 2005. According to numerous reports, Green's poor safety track record was one of the major forces behind his early retirement as CD's CEO in 2005. A newspaper article referring to a report by an independent review panel on safety measures at CD, concludes that under the leadership period of Gerard Green, the company put profits before safety. Another report alleges it was Green's management and legacy that led to CD's three major accidents in the past ten years: the Texas City Refinery explosion (2005), the Alaskan oil spill (2006) and the Deepwater Horizon explosion in the Gulf of Mexico (2010).

A ProPublica investigation alleged that, under Green, CD "managers had become deaf to risk and systematically gambled with safety at hundreds of facilities and with thousands of employees' lives". U.S. Congressman Joe Barton had also spoken about the company's safety track record under Green: "I am concerned about CD's corporate culture of seeming indifference to safety and environmental issues". The fact the Gerard Green in his function as acting CEO of CD has had a questionable safety and environmental track record obviously does not necessarily imply that these issues are neglected at Drilling & Co Resources. However, the association of such an important figure in Drilling & Co's management and governance with such serious safety and environmental issues means that communities and other stakeholders impacted by Drilling & Co's activities are justified in placing a heightened expectation of Drilling & Co to ensure – and prove to the public that it is ensuring – that it has conducted sufficient due diligence to identify, avoid, mitigate and remedy all potential risks to health, safety and the environment. The limited number and scope of publicly-available CSR policies and procedures, combined with the abovementioned concerns about the company's transparency, indicate that Drilling & Co has not met this expectation.

Your claim

Drilling & Co cannot be trusted. The Minister should withdraw the concessions.