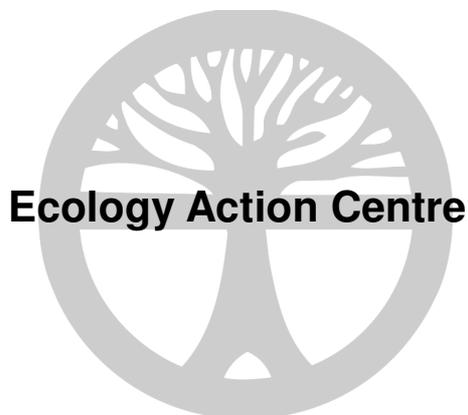


**Review of Keltic Petrochemicals Inc. Proposed LNG and
Petrochemical Plant Facility – Goldboro, Nova Scotia
Environmental Impact Assessment**

To

**Nova Scotia Environmental Assessment Board,
Mr. James Gordon**

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Introduction

The Ecology Action Centre has reviewed the impacts of the proposed Keltic Petrochemicals Inc. plant on the natural and social environment of Nova Scotia with reference to EAC's mandate which is *to promote a society in Nova Scotia which both protects and respects nature and also provides economically sustainable solutions for its citizens*. We ask whether this project is sustainable. We have also considered the need for the project and whether it will contribute to the long-term energy security of Nova Scotians.

We cannot support the Keltic Petrochemicals Inc project for Goldboro, Guysborough County, as well as its environmental impacts assessment report. The assessment's conclusion that there are no significant residual effects cannot be supported, since not all impacts have been assessed, not all mitigation measures are explored in depth, compensation measures are insufficient or unexplained, the conclusions of social-economic benefits outweighing all the adverse effects is unsubstantiated, and the justifications for such a project in Nova Scotia are narrow in scope. The project itself is not compatible with the intent of sustainable development, the purpose of the Nova Scotia Environment Act 1994-95 and the Canadian Environmental Assessment Act.

The environmental impacts assessment report is narrow in its scope and omits important information. The report is difficult to read as information is dispersed throughout the document in a manner that makes it difficult for readers to understand and grasp the whole picture and the real impacts of the project. Some information is redundant, while important information, such as the dimensions of the marginal wharf, are missing or found in less than obvious sections. Data, such as size of the site or the amount of land disturbed and the employment numbers are inconsistent throughout the report.

Major points of concern:

- The project description is insufficient and lacking in vital information
- Most of the Environmental Impact Assessment (EIA) is based on mitigation, not avoidance of impacts. Many of these mitigations are narrow and/or vague in description and incomplete.
- The justifications for the project in the report are misleading
- The report is inconsistent in its job estimates and estimated land surface
- There is lack of consistency and accuracy in identifying an appropriate road to access the site
- Considering the nature of the project, there should be a health risk assessment in this report
- The cumulative effects assessment do not consider all possible scenarios, and
- The safety and risk assessment is lacking in assessing all impacts to local residents.

This analysis focuses on our main concerns with the EIA and the project, more information on our concerns with the project can be found on our website (<http://ecologyaction.ca/Inq/>).

Project Need and Alternatives

Project Need

In the EIA there are three primary components to the argument that this project meets the needs of Nova Scotians: increased exports, alternative clean energy supplies, and a petrochemical industry. The fall-back position is the creation of jobs in the construction and operating phases.

The need for additional exports is on the part of the users of the pipeline to the U.S. market. "...the increased volumes of gas moving with the pipeline will result in greater downstream pressure and thus more favourable transportation toll prices" (4-2) means that the suppliers of gas and the US customers will benefit from the reduced transportation costs, not Nova Scotian consumers. Indeed, given the predicted future demand for gas in the U.S., prices there may not be affected by the lower tolls, and all the benefits will be as increased profits for the gas companies.

The benefits to Nova Scotians as consumers of natural gas are limited by the extent of the distribution system within the province. There is no indication that this system will be expanded because of the additional supply generated by the project. Therefore the benefits to Nova Scotian consumers are speculative.

It is important to realise that demands can be artificially created and do not necessarily reflect a need that must be met. Predicting an increase in demand can benefit those hoping to profit from the creation of the supply even while alternatives, such as energy efficiency and renewable energy, can meet our demand. This leads to the question: Is there really such a demand for natural gas and plastics as predicted or is the prediction leading the industry to create the demand: a demand which is currently unsustainable?

While it is claimed that the Project "...could form the base for a provincial petrochemical industry" (4-1), the value-added processing appears to be primarily an additional step to supply ethylene and propylene to plastics producers elsewhere in North America so that they can proceed with their planned "crackers" which have been delayed for lack of supply (4-5). While the industry may be "viable" – i.e. profitable – it is unlikely that this provincial petrochemical industry would include the production of plastics and the products which are plastic intensive. Thus this petrochemical industry in Nova Scotia would be severely truncated.

Further, the report claims that "the petrochemical component of this Project provides new value added industry to Nova Scotia and is a long term alternative to Nova Scotia being solely an exporter of natural gas" (5-2). This however contradicts the below statement that "*in theory, the demand side of this market could also be addressed through such approaches as:*

- *increasing efficiency of existing petrochemical productions;*
- *recycling of petrochemicals; and*
- *reducing petrochemical demands.*

These alternatives to the Project are largely outside of the Proponent's corporate mandate and control. Easing market demands through these alternative approaches is dependent on political and regulatory initiatives. In addition, they are considered long-term responses to the identified need for the Project" (5-2).

If these alternatives can meet the material needs of both Canadians and Americans, for the long-term, than this means the project is a short-term response. Yet, many of the impacts (environmental, health, social, cultural and economic) assessed, and those not assessed, are adverse, non-reversible or long-term with some short-term. The EIA thus acknowledges that alternatives do exist to meet the demands as identified in the report, but then conveniently disregards its responsibility by shifting it to the governments. This therefore indicates that governments play an important role in creating demand, and thus the governments' approval or rejection of this project will indicate the governments' choice to create sustainable economic alternatives, or continue to support short-term endeavours.

The statement that "*LNG offers North America an opportunity to import natural gas from stranded sources in other regions of the world (i.e., areas where natural gas cannot be feasibly utilized) to offset the flattened profile of natural gas production in North America and meet growing demand*" (4-2), is meaningless without a geo-political analysis of the current supply and demand of natural gas. This claim seems to justify the need for the project, yet it reflects the regional economic risk entwined in the political reality of the project's feasibility.

The declaration that "*... the population of Guysborough County has been in steady decline as a result of the employment situation; this trend is expected to be reversed with the establishment of this industry*" (4-1) is misleading. The report does not justify this demographic decline, as a close look at Table 8.3.2 shows. Considering Canada's demographic inverted pyramid, to claim that unemployment is the reason for a declining population is misleading, and could lull the government in averting to look at other reasons identifying the needs of this County.

The conclusion of the EIA that "the Project has a defined purpose and public need" is a vast over-statement. It will meet the investors' purpose to generate profits but it does not go far to meet a public need in Nova Scotia for a source of a clean alternative fuel and added value to local resource exploitation.

Site Alternatives and Energy

Section five (5) begins by claiming that "the purpose of developing a world class petrochemical industry in Nova Scotia was based on the goal of creating added value to the natural gas found offshore Nova Scotia" (5-1). However, the Keltic project does not appear to do this.

The report's use of the Nova Scotia Energy Strategy (4-1) to justify the project is not in line with the idea behind the strategy. The idea was not to make Nova Scotia an importer of a new energy source, but to insure that if Nova Scotia resources are to be exploited than we should get as much out of it as possible. The fact that we have less fossil fuel than predicted does not justify the importation of a foreign source of energy for an industry that does not exist in Nova Scotia. The report itself states that "the additional or alternative source of natural gas through the importation of LNG is the only alternative to making the Project viable" (4-5). Thus the proponent's main reason for justifying the importation of LNG is to ensure profit, not to meet a need or realise the intent of the Energy strategy. It would use the existing gas pipeline and add to its use for exports of natural gas, but the processing would be of the LNG imports, not Nova Scotia's offshore gas. Thus it would not achieve the stated goal of creating value added to our own natural gas.

The other alternatives discussed in this section become redundant if the petrochemical complex is not developed and it is not clear that it can or should be developed, even in the truncated manner proposed by Keltic. However, there are few points to be made given the lack of proper assessing of alternatives.

The alternatives for the project, especially the site alternatives, are barely mentioned in the report. The report's explanations for dismissing alternative sites are either contradictory to its justification of its chosen site, such as triggering a HADD (Harmful Alteration, Disruption or Destruction) to fish habitat, or based on cost. The Goldboro site does trigger multiple HADDs, yet is still deemed suitable. The cost argument is an unjustified statement given the fact that costs could be reduced, and profits potentially higher, if the project was developed in a commercially accessible existing industrially developed area. A true assessment of alternative sites and the environmental impact for these sites should be included in the report; for if LNG is to be imported into Nova Scotia, an existing industrially developed site would bring more benefits to Nova Scotia than a rural undeveloped inaccessible site.

This project reflects Nova Scotia's lack of a systematic approach to coastal planning and failure to develop an appropriate coastal planning policy, thus leaving rural areas vulnerable to being proposed as sites for large scale industrial development without considering the full impacts on the traditional activities taking place in these areas. A province wide coastal strategy would prevent proponents justifying their projects by stating that a previously non-industrial area has been zoned for industrial development.

Socio-Economic Environment

Mega-projects tend to distort the local economy, even when a project is located in a large urban area. The distortions are much more dramatic in a low population area such as Guysborough County.

While the job potential of the project is clearly welcomed by people who are unemployed or under-employed, a project of this magnitude can have severe effects throughout the economy, particularly in the construction phase. The influx of construction workers puts major social stresses on the area as workers with high incomes and limited diversions overwhelm local social facilities and fracture prior economic and social relationships. Economic impacts include attracting employees from their existing jobs and pushing up local wage levels. In Parrsboro, for instance, employers are already feeling the effects of a major new employer simply seeking job applications.

In addition, the rapid stimulation of the local economy will cause inflationary pressures for all, but only a small fraction of the residents will see comparable improvements in their incomes. Moreover, this is an irreversible process. When the construction phase is over and the tide of construction workers recedes, the economy will not return to its old equilibrium. Some businesses will have prospered others will have been competed out of operation. Expectations will be changed but the post-construction economy will not accommodate them. New social stresses will accompany this economic dislocation.

These long-term costs of the project will also be severe because of the speed with which the construction phase is completed. It is the economic equivalent of an over-powered car which

initially accelerates too quickly to control – and then suddenly brakes to a skidding stop. It is simply not true that these “Potential negative impacts can be readily mitigated” (10-3). These long-term social and economic costs of the project must be added to the environmental impacts – they cannot be claimed to be an offset to the environmental damage that will be caused by the project.

Some aspects of the socio-economic impacts are not included in the report, such as the realignment of highway 316, the three years of disruption to tourism dollars due to construction, the economic chasm which will be created once the site closes, the potential failure to decommission the site, and the preferable economic option to develop where current business could take advantage of the project’s by-products and its co-generation facility. The socio-economic assessment is narrow and therefore the EIA’s conclusion incomplete.

Property Values

The EIA notes that the impact of the project on property values will be positive (9-13, 9-15), in Antigonish and Guysborough counties, implying that people will be better off because their homes and other properties will sell for more. But both propositions need not be true.

It is predictable that the direct effect of the project - purchasing land that it needs for the site, construction activities, and a construction camp; the influx of “long-term” construction workers (involved for the bulk of the construction period) and of workers in industries servicing the construction activities – will be to drive up land costs and property values. But this benefits people who sell their property and move to a new location where property prices have not risen so much.

For the people who wish to stay and continue their traditional lifestyle, rising property values will be a burden, not a benefit. Property values will rise by varying amounts which means that some will experience property values and assessments rising much faster than the average. Thus their tax assessments will also rise faster than average and they will pay a greater proportion of the local property tax even though they may gain nothing from the project – e.g., if they are retired. Thus some, especially those on fixed incomes, may suffer from the differential changes in property taxes and assessments.

This is not an argument that property taxes will increase pro rata with assessments, but that their impacts will be differentiated and increase the inequities in an already regressive tax base.

Property taxes, on average, will rise with increases in demand for local services. As the study notes, some local infrastructure is under-utilised (9-9) and the migration into the area, particularly in the operating phase, may simply absorb the slack. Nonetheless, some infrastructure and services will require upgrading or expanding, particularly during construction with its massive influx of workers. Property taxes will increase to pay for these improvements in infrastructure and the concomitant increases in operating expenses that expansions will entail. Thus all residents will face an increase in taxes even if they otherwise are unaffected by the project.

In addition, the EIA admits that there are people whose property will be negatively affected by the externalities of the construction and operation of the project – noise, truck traffic, dust,

lights, etc. Their property values will fall to reflect the loss of amenities generated by their properties. If they do not sell their properties, the externalities will reduce its value to them and their well-being will decrease accordingly. If they do sell, they will be made worse off by the lower sale value of their homes and property.

The assessment does not include the loss of value for residential properties next to site, nor rising property taxes and insurance cost. Thus the analysis is misleading to imply that rising property values are indicative of a positive change in the lives of the current residents.

Tourism

The EIA recognizes that tourists are attracted to the area by its natural beauty, and that the project will “change the visual character of the landscape from a rural, mostly natural setting to a landscape with industrial development” (9-14). Nonetheless, the report claims the project will lead to additional accommodations and food services and these, along with the interpretive centre at the facility will attract tourists. But if the natural beauty which tourists seek has been blotted by the facility, why would they come for just the accommodations?

The mitigation measures offered, such as attempts to blend in visually (towers, stacks and enormous tanks into the surrounding scenery of trees, ocean and small village homes) and provide interpretive signs, are not realistic considering the motivation for tourism in the area. Thus the conclusion that “On balance, the Project should have minimal adverse effects on tourism near the Project site...[and] may even be beneficial...” (ibid.) is indicative only of the extent to which the EIA presents negatives as benefits.

Jobs

A reader of the EIA has to wonder about the assurances given with respect to the impacts of the many complex processes involved in the construction and operation of this project when relatively straightforward estimates are inconsistent. It is stated that the construction work force at peak is “approximately 3,000 people” (2-35) but also that “during the construction phase of the Project the supporting labour force should peak in the area of 4700 people” (2-55). However, Section 9.3.1.1 claims that “construction employment...and support services will total about 4,775 people who will be employed for varying lengths of time” (9-5). Table 9.3.1 indicates the peak employment on site to be 2000.

The employment figures for the operations phase are inconsistent with the prediction of new families. The labour source estimates for Guysborough include 95 new residents and for Antigonish County, 94 new residents. But these 189 new residents will add only “30 families, at approximately 2.5 members per family” (9-9). Even if every member of the family worked at the project, this would only add 75 workers. Or are we to infer from these data that 30 of the workers will bring their families and the remaining 159 workers will be single, at least when they first arrive?

Similar problems arise in the commuting data. A predicted 280 current residents of Antigonish County and beyond are estimated as part of the labour force plus another 94 new residents to the County. However, they expect only “about 280 workers at the facility to

commute to work from Antigonish County and areas beyond.” (9-9). How are the other 94 going to get to work?

The inconsistency in the terms used and the vagueness of such words as “may”, “about”, “try” in describing the potential jobs in section 9.3 indicate the lack of actual awareness of the estimated number of jobs and to whom they will go. This lack of proper assessment creates a chain effect where the use of these inconsistent, unjustified and misrepresented numbers do not permit the accurate assessment of the economic, environmental, health and safety impacts of the project. Therefore, how can the report accurately assess what will be the impacts, adverse or beneficial, on the human population of the area?

Valued Environmental Components

There are problems with the selection and standards for the Valued Environmental Components (VEC). The temporal boundaries determined in section 7.1.1 does not consider the lingering time the chemicals produced by the site remain in the environment even after decommissioning of the site, nor their cumulative effect on the local population.

The VEC of Light should be separate from the VEC of Noise, and the VEC of vibration should be with Noise, yet is not mentioned. The identification of some VEC species, like lobster, is based on economic impacts and not on the best ecosystem indicator species. The lack of attributing cultural value to wetlands disregards the contribution they play in providing medicinal plants. The lack of attributing enjoyment of property in fauna and flora disregards the role wildlife and habitat play in the choice of a property, its economic value, and the enjoyment of a property.

In section 7.3 and 7.4.1 the pollution pathways are said to be considered in the VEC assessment and environmental effects assessment, yet the exploration of these affected pathways is limited in the EIA, and does not follow the environmental and health effects which may occur beyond the spatial boundaries determined by the proponent.

Air Quality and Green House Gases

The petrochemical facility will emit multiple air pollutants, including sulphur dioxide (SO₂), nitrogen oxides (NO_x), monoxide (CO), total suspended particulates (TSP), particulates matter (PM₁₀, PM_{2.5}) and Volatile Organic Compounds (VOCs) (Section 8.4.2.), all of which affect both human health, environmental ecosystems and contribute to climate change.

The impacts of the total air emissions are narrowly calculated considering the nature of the compounds, and the numbers of hours and days per year that the plant is in operation. The cumulative impact of the air emissions from the Sable Offshore Energy Inc (SOEI) gas plant, the LNG vessels and the merchant ships, the tug and pilot boats, the trucks and daily commuting vehicles, and the co-generation facility is not sufficiently covered. When considering these multiple sources of air pollution, the duration of the emissions (independently and combined) and the nature of the compounds, a health risk assessment should have been included in the environmental impact assessment. The proponent does not meet the burden of proof that this project is not a health threat to Nova Scotians. The fact that

the report indicates it will follow regulatory obligation does not justify the lack of information on this point. Regulations are not always respected nor enforced, and the cost of fines for such a mega-project is an insignificant expense.

The report does not include the whole lifecycle of the LNG process in its contribution to green house gases. It does not include the first three years of construction which will precede the operation of the co-generation facility, during which the project will acquire its energy from the Nova Scotia Power Inc (NSPI) grid; thereby adding to the energy burden of the province and add its emissions to those of oil and coal being burned by NSPI. The report does not add to its green house gas contribution the construction emissions from vehicles or the emissions from the daily workers' commute. The mitigation measure of encouraging carpooling is unlikely given the wide geographical spread of potential workers, and the difficulty of monitoring by the province. The residual adverse effects for green house emissions and long-term atmospheric disturbance are significant and the mitigation measures suggested are insufficient in reducing the contribution of the project.

The air quality assessment does not cover the effects of potential odours, an important wellbeing factor, coming from the facility and how this will affect the local fauna, the residents' enjoyment of their property, and their property values.

Noise and Light

The EIA admits that the proposed site is "semi-rural in nature" (8-23), that there are "limited noise sources in the area" (8-23), and "virtually no artificial lighting sources" (8-24). The justification that there currently is the SOEI gas plant does not reflect the reality that the industrial site is not developed. As describe in the EIA section 9.5.2.1:

"This existing visual landscape can be described as a rather coherent, harmonious, and rural to natural due to the:

- *extent of natural vegetation;*
- *extent of largely undisturbed natural shoreline;*
- *absence of visually dominating industrial and commercial infrastructure;*
- *small scale and coherent village architecture; and*
- *small scale road infrastructure.*

The landscape offers a limited number of man-made orientation points, resulting in a somewhat "untouched", "remote" landscape character. The influence of the existing gas plant has very little effect on the existing landscape character, since the only component visible from public locations and residential areas is the flare stack."(9-21, 9-22) (Note the SOEI gas plant flare does have vibration and air pollution impacts however).

The visual landscape and the low level of noises and lights in the area clearly indicate that the area is not industrially developed and, therefore, effects from the construction and operation of the Keltic project and site will be major. The assumption that "there will be an opportunity to rehabilitate the visual landscape following decommissioning, therefore the effects are not permanent" (9-25) is misleading as decommissioning of the site is never guaranteed, and rehabilitation costs can become too elevated for the best option to be implemented. It is therefore likely that the effects will be permanent.

The area's semi-rural nature, culture, society and communities and its above mentioned lack of noise, vibration, lights and smell pollution are major factors contributing to enjoyment of property, cultural and social identity and economic benefits in the area. The mitigation

measures offered by the assessment (section 10.8) cannot compensate for the fact that the facility will be a complete contrast to the whole nature of not only Country Harbour area, but along the whole of the Eastern Shore from Canso to Sherbrooke.

Vibrations

The vibrations from boats, flares, trucks and facilities are not mentioned in the report and therefore missing from the assessment. Current residents of Goldboro have complained of how the ignition of the SOEI flare makes objects in nearby homes shake. Yet, the EIA does not cover what would be the cumulative vibration and noise impacts of the added Keltic facilities' multiple flares. The mitigation measure of offering a telephone number for complaints (section 10.8) should include what actions will be taken by the proponent. Will they stop and review their operations? Will they stop after 100 calls or after 10? What measures can be taken to stop the vibrations and noise once the site is operational?

Similarly there is no assessment of the effects of the noise and vibration impact of increase traffic from trucks and car, both during construction and operation, on the local enjoyment of property, community health and social cohesion, impacts to agricultural animals, etc. This is also lacking from the noise coming from ships as they come into port, and how this will affect the human population but also the seabirds nesting a kilometre or less away from the traffic.

The EIA quotes the “ ‘Guideline Values’ ” criteria from the Nova Scotia Department of the Environment and Labour: “*Noise legislation should be designed primarily to protect public health and within reasonable economic restraints provide a quiet and restful environment in which to live, work and play.*” (8-24). Given the lack of urban or industrial noise in the area, these requirements are currently met by the nature of the communities. Therefore, the project despite mitigation measures will have significant adverse effects on the area's auditory and visual environment.

Wetlands

Wetlands are extremely productive systems that provide food, habitat, and shelter to numerous species, as well as medicines, buffer zones, materials and pollution control for human life. The EIA itself states that “*Wetlands are important landscape features on the Keltic Site. Wetlands have several functions and values, including (Hammer, 1996):*

- *Life support for a broad spectrum of life forms, including many species that are endemic to wetlands; i.e., orchids such as dragon's mouth.*
- *Hydrologic modification such as ground water recharge and discharge.*
- *Water quality changes such as removal of pollutants.*
- *Erosion protection by absorbing and dissipating wave energy (especially in coastal areas).*
- *Open space and aesthetics including recreation, research, scenic influences.*
- *Geo-chemical storage including carbon and other sedimentary minerals.*
- *Life support and hydrologic modification and stability are probably the most immediately important functions on-site and throughout the entire Keltic Study Area.*” (8-87)

Yet, despite this acknowledgement, and that most of the Keltic site is considered of a “wet” nature (8-89), and that “an estimated 42% of the Meadow Lake basin is wetland” (8-96) the report claims that the residual effects (Table 11.1-1) of the destruction of this habitat is minor.

The justification for this claim (9.12) and the uncertain terms used to mitigate the impacts (10.11.1) are insufficient and contradict the report's own admission of the importance of wetlands.

The province of Nova Scotia's recently updated Wetlands Directive, which came into effect in March 2006, recognizes the importance of, and threats to, Nova Scotia's wetlands. The new wetlands policy and its accompanying Operational Bulletin strive for "no further loss" of wetlands habitat. They contain a clear mitigation sequence requiring proponents to avoid any damage to wetland habitat at all stages of a project. When damage is unavoidable, the proponent should include a detailed mitigation plan outlining how they plan to minimize the damage to the wetland through changes in siting of project components, construction techniques, or other methods. Permanent loss or destruction of wetlands must be compensated for, usually through wetlands restoration. The proponent fails to clearly explain why they cannot avoid the wetlands and provide detailed compensation measures for restoring permanently altered or damaged habitat.

Fish and Fishery

The project because of its size will have a major impact on marine and freshwater fish habitat. Fishermen will also lose access to fishing grounds because of the new facility and the passage of tankers in and out of the harbour. The proponent should make the information on compensation to local fishermen publicly available.

Though the report provides enough detail on the biodiversity in the marine environment surrounding the site (8.12.2.3), the impacts of site runoff, leaks and accidental releases of products and by-products from the wharf and vessels into this environment are poorly covered. The impacts on these species may affect the foraging of sea birds, and must therefore be assessed in greater detail.

The impacts on marine ecosystems from the presence of the marginal wharf, LNG terminal and vessels are insufficient in properly assessing the residual effects of the site on marine life, especially considering the presence of mackerel and hearing both juvenile and adult, as well as aquaculture operations. The data used for assessing fishery numbers and fish species in the area varies in temporal and spatial quality and may affect the accuracy of the assessment.

The impacts on fisheries, current and future, is not sufficiently covered in the EIA considering that *"the value of these fisheries is linked to the productivity of the area which is influenced by the habitat quality of the marine environment that supports primary producers, prey, and predatory species. Changes to the marine environment, particularly within the vicinity of the proposed Petrochemical wharf, will have adverse effects upon habitat and productivity"* (8-128). The report's assessment focus for fisheries is narrow, and dismisses its effect on the future fishery which is in contradiction with the multiple efforts made in the last few decades by the local fishermen to manage a sustainable and more diverse fishery.

The impacts on the freshwater and marine fish population of the area is important, and in some cases non-reversible, considering the major habitat alterations, disruption and destruction caused by the construction, the operation and the potential decommissioning of the site. Despite these multiple adverse effects on ponds, wetlands, streams, rivers, lakes and marine ecosystems, most of which identified as being habitat for fish, the report still claims

the mitigation measures will result in a minimal residual effect to fish population. The report fails to consider, even in its Habitat Compensation Plan, the timeline involved in creating adequate fish habitat and the important role they play in the land ecosystems. When looking at alternative sites, the proponent dismissed a site “because of the potential HADD...(Habitat Alteration, Disruption or Destruction)” (6-2) of fish habitat. Therefore why is this not a concern for the Goldboro site?

The assessment of the fish and fishery impacts based on oil spills calculations (8.11) is misleading. The report needs to clearly make the distinction between how an LNG spill on water differs from an oil spill, and consider the nature of the substance being released. The effects of such spills are not only on the fish, but those practicing both commercial and recreational fishing in the area. Considering that “...the coastal Study Area for the Keltic Project was delineated to extend approximately 30 km on either side of the proposed project site in Goldboro...” (8-98), the impacts of LNG leaks or spills are not assessed in depth throughout this 30 km radius.

Mitigation measures to monitor the quality of the fish and invertebrates caught for the fisheries is not explored in sufficient details to guarantee that pollution of the food chain will be noticed. What measures will be taken, if this situation arises, is left to the proponent’s adherence to regulations. This is not sufficient considering the nature of the project, and the contaminants, arsenic and mercury among others, being disturbed and/or released into the environment by the construction and operation of the site.

The compensation for the lobster fisherman and other fisheries need to be more thoroughly assessed, as fishermen across the Maritimes have had negative experience with major developments in lobster habitat, both from environmental impacts that were not properly assessed, and from operational details of having to fish in new areas and/or change their navigation routes to skirt the bigger vessels.

The issue of ballast water is left unexplained and this lack of explanation is poorly justified: “LNG vessels will be brought in fully loaded and reballasted offshore. Ballast water issues are not expected to arise under current navigational regulations” (2-77). Considering the high increase of multiple foreign vessels coming into the site, and the presence of aquaculture and fisheries, the EIA should provide more information and explanation as why they assume no impact? How far off shore will all vessels reballast? How much water would be required and what would be the impacts?

Water

Wastewater Management

Water is classified according to its contamination and handled accordingly (2-26). Water from “uncontaminated areas” such as roads, roofs, and undeveloped areas is discharged through a storm-water outfall for final disposal in Isaac’s Harbour. But will these areas be uncontaminated if there is an accident in one of the many processes, an accident which involves the release of airborne pollutants. If the accident occurs on or shortly before one of the many days of rain, those pollutants end up in the harbour. Moreover “Rainfall in excess of 25 mm is considered clean and is diverted to the storm-water outfall” (10-12) apparently even from contaminated areas. But a heavier rain is more likely to wash a greater proportion

of contaminants away from the site – and into the harbour. Thus the heavier rain water may contain a smaller percentage of contaminants but will nonetheless be carrying them to Isaac’s Harbour.

The water which is from contaminated areas (and when rain is less than 25 mm) will be treated and oils “pumped to the recovery oil tank. This oil will be disposed of offsite.” (2-26). What are the impacts of trucking this waste? How far will it go? Who will be accountable for leaks or accidents on the way to “offsite”? Is there no concern about the inconvenience of extra truck traffic or of the environmental dangers of transporting these oils or their impact on the offsite dump?

To be told that “To minimize, contain and control any potential releases of hazardous materials...a site-specific Spill Response Strategy will be developed within the Spill Management Plan” (2-56) is not re-assuring. Who will determine the adequacy of this Strategy? Who will define “minimize, contain and control”? How can certainty be given to residents that regulations will be enforced, or management practices followed?

Wells

The mitigation measures (10.10) to avoid the spill of toxins into the underground water systems through the old gold mine works in the area are not guaranteed to be followed at all times. Yet, this environmental effect is considered major and a high risk of contaminating local wells. Considering the high risk to human health in case of failure to comply with these measures, and judging if these measures are sufficient should not be determined by the proponent, but rather by the local population and the government.

Considering the time it takes for contaminants to travel within ground water, the timeline set in the EIA for the effects of the site is too short to adequately assess the impacts and residual effects.

Geology

The EA fails to properly assess the impacts (10.18.13) to air, land and water if they cannot avoid acid drainage from constructing on the Halifax Formation; this despite stating that construction could expose this geological formation, and may not be avoidable at all times (8.13). More information is needed, before the project moves forward.

Considering the levels of arsenic and mercury in the goldmine and the link of some mines to the ocean, more information as to mitigation measures and how efficient they would be in addressing this highly dangerous health and environmental polluting issue is needed.

Where will all the waste from the old gold mines go during construction? How will they be disposed of?

Flora and Fauna

The impacts of fencing off the Keltic Site should be assessed in the report considering population movement of what land species remaining in the area after construction. The EIA should also include what impacts removing habitat for top predators, like raptors, will have on the local food balance. Though the mitigation measures are offered for introduced and invasive species, these only cover the Keltic site, not the impacts of the new roads and their associated traffic and pollution. The EIA admits to the presence of multiple species on or near the site (8.8) yet assesses the residual effects as minor to medium. This assessment must be questioned in light of Canada's biodiversity agreements and SARA obligations.

The risk to the neighbouring endangered Roseate Tern population from the traffic of LNG vessels close to such an important segment of the national population (37.5%) is not acceptable. The report does not indicate that the distance between the Country Harbour Head and Harbour Islands is less than 4 km, thereby placing the LNG vessels within 2km of the population. The EA states that "...there are shoals around Country Island that would be avoided by LNG tankers; recently, a shrimp boat was grounded near Country Island with no adverse affect on the roseate tern colony (A. Boyne, pers. comm.). No impacts are expected during standard operations." (9-90). This statement is misleading, as the proponent cannot guarantee that the LNG vessels won't get grounded and if they do, their size and cargo would impact the birds differently than a shrimp boat. Furthermore, as unlikely as an explosion may be, given the severe impact of only one such accident, the significance to the seabird population would be major.

The actual amount of land impacted by the site is inconsistent and is not accurately tallied in the report. To the Keltic site itself, which varies multiple times from 300 to 390 hectares (ES-1, 9.10, 8.8.6.3, 15.1), must be added the two-lane 12 km road and its 50 m right-of-way (2.4.1.6), the access roads for the gas pipelines, the water pipes and in between the dam structures, and the 295 ha (2.5.12.1) of flooded land. The report is therefore misleading, as "the Project components, as described in Section 2.0... in total, will require approximately 300 hectares (ha) of land" (15-1). The actual land impact and necessary assessment should cover over 800 ha of land. As such, is the habitat compensation plan sufficient, considering the extent of impacts on ecosystems, and are the assessed impacts reflecting the real habitat lost?

Section 8.8. clearly indicates the wide variety of birds, many of which are not usually found close to industrial site. The overall assessment of the effects of the site on these birds, many of which are identified as being of concern, is insufficient and too easily rationalised by relying on the mitigation measures. The question must be asked as to why this area has such biodiversity from invertebrates to top predators. The long history of human presence with no heavy industrialisation could explain why so many wilderness species are found in the area.

The Habitat Compensation Plan offered by the proponent is lacking in depth and consideration of other activities currently ongoing in the area. The Habitat Compensation Plan only offers rehabilitation of lobster habitat, and does not look at the other marine and land species being affected by the site. The Wetlands Compensation Plan is not indicated in the report or the Appendixes and therefore cannot be assessed.

Roads

The assessment of the impacts of the project on the current roads and the changes to the Marine Drive is narrow in scope and does not consider the reality of rural living. The proponent has changed its proposed road alignment at least three times. Could this be because the location of the site is problematic in ensuring the respect of local citizen's safety and environmental sustainability?

The EIA's estimated new vehicle collision rate for the area once site begins construction (8.16) is conservative considering the slightly inflated carpooling rate, the poor lighting on these sinuous two lane roads and the speed at which local residents tend to drive in these roads; as indicated by the current high collision incidents despite the low traffic on the local roads. Given the length of the route, its poor maintenance and the proximity of rural homes along it, is this road acceptable for the daily commute of traffic to and from a heavy industrial site? The alternative of building a highway through wilderness areas puts the environment and the future capacity of our ecosystems to provide for us at an equal or greater risk. Therefore, is the proposed location of the Keltic Project the best site given other deep harbour ports which already have the maintained infrastructure capable of handling such vehicular traffic?

The health and safety assessment of the proposed routes does not consider the reality that rural roads are also the only means of movement between towns for pedestrians and cyclists. On a daily basis, residents walk the shoulders of the roads for strolls as well as to get from one neighbour to the other. An increase in heavy trucks carrying dangerous goods and a large increase in commuter traffic will have safety impacts on pedestrians, and will have health and enjoyment of property impacts on the local residents. These points are not covered in the assessment, and they should be considered of medium to major significance.

Marine Drive

The rerouting of the Marine Drive behind the site will have adverse impacts on the environment which are not considered in the EIA, such as opening this undeveloped area to future land development and the spread of vehicular pollution to wetlands, waterways and species. It also takes away from the current attraction of the Marine Drive for tourism.

There are also adverse effects to local residents who use the current Marine Drive as a pedestrian walkway between neighbours. The Keltic site will be fenced and access limited for security and health and safety reasons (9.5.2.2, 10.22.9). Therefore local citizens will be cutoff from each other or will have to walk a longer and more challenging route via the new road. This impact is major in affecting the social structure and cohesion between villagers, and affects the health and safety of the local residents. Yet this point is not covered in the report, and no mitigation measures are offered.

Based on the first description (2.4.1.1, Figure 2.4-2), the rerouting of the Marine Drive cuts off the towns of Drum Head and Goldboro from each other, creates a dead end on both sides and thereby diverts the through traffic around the heart of both towns. The towns will lose current and potential tourism dollars, and the homes closest to the site will have very low property value because of the high risk associated with being situated next to an "thermal

exclusion zone” (2-35). These socio-economic impacts are not considered in the report, and mitigation measures are not offered for this loss of community cohesion and property value.

Marginal Wharf

The EA report fails to indicate the actual estimated dimensions of the marginal wharf, 203,000m², except in the Habitat Compensation Plan (Appendix 14). When asked why this information was not in the project description, and other parts of the report, the consultant firm, AMEC, explained that the dimensions were still approximate until designs are finalised. This does not justify keeping the dimension out of the report’s project description as most numbers and dimensions in the report are estimates, and inconsistencies in employment numbers and actual hectares affected, are still used to assess the impacts of the site. The size, as well as design, of the wharf plays a major role in the assessment of its marine environment and socio-economic impacts. Failure to include these dimensions and its attached effects prevents an accurate assessment of the project’s claim that the residual effects of the wharf are not significant.

The EIA’s justification that “*the wharf protrudes into the entrance of Isaac’s Harbour, occupying about 45% of the width of the entrance between Red Head and Bear Trap Head. However, the entrance to Isaac’s Harbour reduces to a similar width another 500 m further into Isaac’s Harbour*” (10-24) does not justify the lack of assessment of the wharf at this location on the flow of sediment, the flushing ability of the harbour and the impact on marine species.

Navigation

The navigation impediment caused by the marginal wharf is major when adding the blockage of Isaac’s Harbour (45%) to the 700m radius LNG vessels need to turn around from the LNG terminal. This in effect blocks access and movement to both Country Harbour and Isaac’s Harbour. The report does not indicate the time it takes for these vessels to turn around nor what impact this will have on the economic loss to fishing ships delayed from accessing their fishing gear or returning their catch. With the expected presence of these vessels in the harbour, “every 3.5 to 1.8 days”, with a maximum of two LNG vessels docked at once, and the coming and going of 200 other vessels longer than 100 m (2-137), the current use and access of Country Harbour, Isaac’s Harbour and Stormont Bay will be significantly affected by the marginal wharf, the LNG terminal and vessel traffic. The mitigation measures (10.14.2.1) offered will not necessarily compensate for the economic and safety risk incur by fishermen who must be moved to accommodate the Keltic site.

The EIA safety measure (10.23) in case of high waves or storm surges is to detach the vessels from the LNG terminal to avoid spills or infrastructure damage. The report does not state where the ships will go from there, how far into the Harbour they can move away from the terminal, as the space is no more than a kilometre between the terminal and the coast. The safety assessment does not include the risk to fishermen returning from sea into the harbour when these storms occur if their way back is blocked by one of the LNG vessels either in the turning process of floundering in the waters at the entrance of Country Harbour.

Dam

The EIA does not properly cover the impacts of the pipelines from the dam to the site, nor whether roads will be needed for this and what their impacts will be. The proposed fishway, design is vague. It should be designed to allow the passage of not only Atlantic salmon, but other fishes such as American eel and gaspereau. The mitigation measures offered for the dam need to be reviewed in more depth considering the loss of waterfowl nesting sites, destruction of wetlands and disruption to navigation and fish migration.

The lack of mitigation measures for dam failure is unacceptable.

“The supply of fresh water to the Keltic Complex will be provided via a newly constructed pipeline and dam. In the event of an uncontrolled dam failure, accumulated water contained in the dam reservoir (i.e., Meadow Lake) would flow to the most northwest inlet of the Isaac’s Harbour by virtue of the surface topography of the region which would be routed via Isaac’s Harbour River. As the harbour is approximately 1 km wide and the Keltic Complex Isaac’s Harbour shoreline is more than 4 km from where the escaping water will be entering the harbour, no water or resulting damage is contemplated to impact the Keltic Complex given the harbour’s inherent surge capacity and no additional mitigative measures are required” (10-54). What of the impacts to the lands, ecosystems and homes along the River’s shoreline? What of the culvert that crosses Isaac’s Harbour River before it enters the harbour? How will residents be notified in case of dam failure? Will the failure create nothing more than spring runoff or a strong wave? None of these questions are answered in the EIA.

There is no explanation in the report to prove that the “present estimated demand is 1200 m³/hr which would include domestic demand...” (4-9) of the water withdrawal from Meadow Lake will not increase. The 2002 flow rate with dam as per the EIA would provide a potential “withdrawal rate of 1,260 m³/hr as defined from the current Keltic study data.” (8-44). This calculation, if correct, gives only a 60 m³/hr difference between the withdrawal rate and the potential withdrawal rate available. This does not give much room for longer drought periods than expected, daily over-consumption from estimate or over-withdrawal in case of emergency (safety mitigation measures because of the close proximity between LNG Storage tanks to avoid a domino effect requires large amounts of water). What happens if they need to use more water? What if the water levels drop too low on a permanent basis in 10 or 15 years? What are the impacts on the lake’s ecosystems if this occurs? The report does not elaborate on these points. The use of words like “approximate” and “might be regarded as “safe”” (8-46) indicates the uncertainty of the estimated withdrawal rate and the means of the dam to meet the demand.

The impacts of using alternative salt-water sources are not covered in the EIA despite mentioning the potential use of seawater for the site. More information on this possibility and its impacts are needed.

Health Risk Assessment

A health risk assessment is not included in the report, as such the population is not informed of the health effects the chemicals related to the project may have on them, nor what symptoms may come from exposure. This is not acceptable considering the nature of the chemicals being processed and used in the proposed plant and the large ecological footprint of

the site. The report states that the “*construction of the petrochemical complex may induce potential effects on VECs relevant to human health. These include air quality, groundwater, geology (soil), and surface water*” (10-42). Its proposed mitigation measures focus mostly on health and safety for workers, but do not assess the impacts on others. The facility will emit NO_x, SO₂, Co, PM₁₀ and PM_{2.5}, and VOCs, all of which have impacts on human health, as well as the by-products and products of the petrochemical facility. Yet the proponent goes no further than outlining the regulations and health and safety procedures to be followed.

The EIA does not answer questions such as:

- What would be the impact of a leak from the ethylene plant or from the polypropylene plant or storage tanks?
- What impacts will VOCs have on human health if they find pathways through leaks?
- What are the impacts of VOCs from the air emission on human health?
- Are any of the chemicals released during the normal and accidental procedures of the complex bio-accumulative?
- What symptoms should local residents be aware of to identify contamination to these chemicals?
- Would the waste water treatment mitigation measures be able to detect and handle the chemicals before release?

The health effects should be included and these questions answered in the EIA report if residents and the environmental assessment board are to understand what risks are related to this project.

Safety

The LNG ships are a risk, and even with the mitigation measures in place accidents will happen and the people of the area should not be expected to accept the risks associated with provision of energy to the U.S. and production of plastics. Safety and mitigation measures have never been 100% sure and with the instant freezing to anything in contact with LNG, its asphyxiating nature once released to ambient air, and the highly explosive nature once the mixture is a volatile gas means even one small leak is highly dangerous.

The report goes in great detail about the LNG leaks, spills and accidents scenarios and impacts (9.21), but only mentions historical accidents and which regulations and best management practices it will conform to for the petrochemical facility. Since the list of accidents in the chemical industry is longer and has been more deadly than that of LNG, why are the health and environmental risk for an accident at the petrochemical facility not included in the report? How will residents be informed? What will be the impacts to the fishery, the animals? If the wind is predominantly from the north-west would the endangered Roseate Tern be downwind from any major chemical accident? What would be the effects on this population?

Cumulative Effects

The project’s temporal scale (7.1.1) must be considered for cumulative effect if the EIA’s conclusion that the socio-economic benefits outweigh the adverse environmental and health

effects is to be proven. This is a timeline of the projects impacts based on the report and the missing information in the report:

- Environmental impacts (permanent (non-reversible) and long-term) in most cases
- Loss of enjoyment of property and area (immediate and permanent)
- Loss of neighbouring property value (immediate and potentially permanent)
- Impact on community identity, history and life style (immediate and permanent)
- Construction jobs 33 months or less
- Permanent employment (unknown due to volatility of market & lifespan of plant).
- Lifespan of the facilities (material) 20 to 30 years, with maintenance maybe 50
- Life potential of project given markets and international ties, less than 50 years
- Decommissioning of site (if done) 12 months
- Rehabilitation of site (too many unknowns to determine)
- Gas potential for SOEI plant less than 15 years
- Health impacts (immediate and long-term, spanning multiple generations)
- Capacity of rural communities to bounce back from closure of one resource industry as sole or major economic provider (very difficult, sometimes permanent).

On a temporal scale the project's benefits versus adverse effects do not balance out for the current and future generations. The definition of sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (UNESA, 2006). This temporal scale shows that this is not the case.

Questions:

- What is the cumulative effect of 50 years of withdrawing water from the lake?
- What will be the effect of the combined out put of green house gas emissions from all aspects related to this project (ships, cars, trucks, operations, etc)?
- What will be the cumulative effect of opening an undeveloped area to a new road?
- What is the combined effect of the marginal wharf, the LNG terminal, the presence of 300 to 400 vessels per year (2.5.10.14), the disposal of waste water in Isaac's Harbour and the dam on surface water quality, fish habitat and enjoyment of property?
- What is the combined effect of increase road traffic, vehicular pollution, noise and air pollution, safety risk and enjoyment of property to the residents along the commuting roads?
- What is the combined effect of air pollution from the vessels, trucks and cars, SOEI flare, the LNG terminal and regasification complex and the petrochemical complex?
- What will be the long-term health impacts of the release of VOCs by the plant when added to the existing chemical burden in people?

These questions are not answered in the report as the EIA looks at each component individually and does not clearly show that proper calculations and consideration of the cumulative effects have been made.

According to the report the EIA "has considered any potential cumulative effects that may result from Project construction or operation or in concert with any other projects known for the reasonably foreseeable future (five years)." (9-192). Why only five years? Some environmental impacts are known to be permanent while others uncertain; the habitat compensation plan will take more than five years to reach the level of what was at the site before Keltic; and the project plans to be operational for 50 years? Any health ailments caused or aggravated by the project will not necessarily appear within five years.

Future Expansions

The Keltic site is the first step in the municipality of the district of Guysborough's planned heavy industrial expansion of the Goldboro Industrial Park (figure 8.12-1). The municipality intends to spread north-east to Ocean Lake covering over 2000 ha of wilderness with similar projects as Keltic. Keltic also plans to bring the Marine Drive behind the site, and this new road would open up the inland wilderness area to future expansion.

Therefore, the cumulative effects of this project must include the impacts that future development will have on the environment. Considering that the area behind the Goldboro Industrial Park is undeveloped and that the expected expansion crosses multiple water ways and squeezes up to Ocean Lake, an important fish habitat (8.12), this industrial expansion would have significant impacts on the environment. Yet, the proponent disclaims this responsibility "... *the context for cumulative impacts is one where the Keltic project is not anticipated to be a precursor to many other developments – cumulative impacts can be considered largely with respect to existing oil and gas projects.*" (9-193). This statement contradicts the fact that throughout the EIA the presence of the SOEI gas plant is used numerous times:

- to justify Keltic's chosen location "...located adjacent to existing natural gas facilities" (6-3)
- as a current source of air, noise and light pollution (8.4.2, 8.5.1, 8.5.2.1)
- to justify its "semi-rural" description of the area (8.5.1)
- to explain the apparent community acceptance of heavy industry (6.1.1)
- justifying the use of rural roads (6.5.2)
- to justify the low significance assessment of some of its impacts (Table 9.5.2)
- as a source of easily accessible environmental monitoring data (9.6)
- to use its environmental management and development information to plan its own (9.8.2.4)

The EA itself states that "*Construction of the SOEP gas plant in the Goldboro Industrial Park has spurred expansion of the current industrial site to include land for the proposed Keltic development...*" (8-1). Thus, once the Keltic site is approved, other heavy industrial developers may use the same reasons as Keltic for choosing to sit their industry in the currently undeveloped, but recently rezoned, wilderness area between Goldboro and Ocean Lake. Therefore, the assessment of the cumulative effects of the Keltic site should include the environmental impacts similar sites would have on the Ocean Lake watershed. The expansion would bring about an irreversible change to the local communities and their surrounding environment, and the impacts on the local species and the future fisheries should be estimated.

Cultural heritage

The EIA identifies the proposed Keltic Study Area as an important archaeological site containing heritage from Mi'kmaq, Black Loyalist and European settlers (8.2). It therefore has a history spanning 6000 years of human occupation. The European heritage covers both traditional fishing and the legacy of the gold rush days. The site holds much history and should be developed as a cultural heritage site, and this unique cultural legacy emphasised and celebrated. Even with its mitigation measures, the project will erase the potential for such local cultural education and heritage experience, and related tourism dollars.

The site of the marginal wharf, Dung's Cove and Red Head Point, is of historical importance to the Black Loyalist descendants of Nova Scotia, and Canadian heritage history (8.14.1). The descendants from this area are now in Lincolnville where current problems exist regarding the siting of a second generation landfill next to the first generation landfill one kilometre from the community. Some community members have expressed grievances towards this development and believe their community is threatened by the landfills and their related health, environmental and social effects (Daily News, 2006). With the origin of Lincolnville at Dung's Cove, which will become the marginal wharf, and the risks to their current community, is the Keltic site helping to erase the history of Black Loyalist Nova Scotia? Will the multiple types of waste from the Keltic site, both during construction and operation (2.4), end up in the new second generation landfill next to Lincolnville, and what does this mean for the future cultural heritage of the children of Lincolnville?

The Red Head Cemetery, though the bodies have been excavated and some mitigation measures offered (9.18.1), remains a spiritual site and will become inaccessible to the descendants of the area, because of security, health and safety reasons. A spiritual place that cannot permit access to worship becomes mute. The EIA does not assess the significant cultural link between place, fauna and flora, traditional fishing spot and all around identity of the communities of Country Harbour with the well being of their environment and the nature of their rural towns. The residual effect of this development on the heritage sites and the local culture are significant, major, and are non-reversible.

The Mi'kmaq TEK study in the report (Appendix 2) was done in October 25 2005 before the conception of the dam and the new road. Most of the conclusions are surrounding the old highway with little on the impacts the project may have on traditional resources close to the site, such as in Drum Head and Seal Harbour. New studies and conclusions regarding the dam and new road are not present in the EIA. As well, the future expansion design is also not included in the studies conclusions, and its impacts are therefore not assessed. Therefore a new assessment of the impacts all components of the Keltic project will have on Mi'kmaq resource species.

The proponent offers no mitigation measures for the impacts the project will have on Aboriginal use of the area (Table 9.2-1, Section 9.2.3), yet considering the extent of the project, the future expansion and the lack of study on the new components of the project and lack of identified direct consultation, it would seem mitigation measures or compensation measures should be present.

Public Consultation

The public consultation assessment by the EIA should be reviewed by an independent third party prior to the Minister's decision. The manner in which local populations are informed, heard and answered influences the proper application of the consultative process. An independent reviewer should look at the methods used to consult, who were consulted and who wasn't, how information received by the proponent was used, and the efforts of the proponent in diffusing the information about the environmental and health impacts of the project. The EIA does not provide a clear portrait of whether residents in Country Harbour area have been adequately informed, nor by whose standard is this information determined to be sufficient. As an element of the EIA, who will monitor the effectiveness and fairness of the consultative mitigation measures?

The lack of province wide public awareness, knowledge and expression regarding this project, which is bigger in scale than many of those proposed in other Canadian and American towns, bring questions as to the value of the efforts to encourage public participation so far.

The EA identifies the legal necessity of "...direct consultation with Aboriginal Peoples" (7-2) and "in addition, extensive consultation was undertaken with the public at large, government department and agencies, stakeholder groups, and First Nations (see Section 14.0)" (7-3). Yet, there is no mention in Section 14 of Aboriginal consultation, and no details of what steps have been taken nor will be taken to ensure Aboriginal consultation. The Mi'kmaq TEK study explicitly states that "This study is not for Consultation for justification of the Infringement of S.35 Aboriginal Rights." (A2-pg.4) As such, conclusions from the report cannot claim sufficient consultation without proper proof.

Who is being consulted? Where are the questions and answers from this "direct consultation with Aboriginal Peoples" (7-2) in the EIA? If direct proper consultation is not held what will happen in the future with the land claims agreements? What will happen with the future expansion and how that will affect Mi'kmaq heritage and harvest? How will Mi'kmaq communities implement social and cultural rejuvenation and healing programs based on traditional knowledge (if so desired), if their traditional lands keep diminishing and access to harvesting areas denied? To what long-term socio-economic risk is the proponent subjugating the local communities, the project, and the municipal, provincial and federal governments if Mi'kmaq consultation is inadequately done?

Considering the relationship between some partners of the Keltic project and their potential or existing role in influencing the outcome of public participation, or justifying consultation, the provincial EA process must be more vigilant in ensuring the implementation of fair and representative public participation and consultation.

Mitigation measures

LNG is new to Canada as well as the operation of the LNG terminal and petrochemical complex and wharf. The report does not provide adequate explanation for the effectiveness of the proposed mitigation measures to protect the LNG terminal and its attached vessels from wave action, storm surges, thick fog and severe storms. Considering the high risk involved with an LNG accident, the proponent should provide more details to ensure that Stormont Bay and Isaac's Harbour area are actually a safe transportation route and docking area for these ships.

Too much of the environmental assessment relies on best practices, proper management, future development of environmental management plans, and conforming to regulations. Across Canada regulations are hard to monitor and especially enforce, plus regulations are themselves not guarantees of protection of human health, but rather tools for controlling the amount of pollution that is believed to be safe. Canada relies mostly on a volunteer approach to ensuring companies meet requirements and regulations more than use of fines or prosecution, and best management practices can vary greatly in effectiveness. With the possibility a project of this magnitude already has to include the cost of paying fines in its budget, the precautionary principle should prevail and an in depth assessment of health impacts, currently missing from the EIA, should be mandatory prior to obtaining approval.

Conclusion and Recommendations

The EIA shows the wide variety of life forms on, under and near the proposed site, and indicates that this environment is sustaining a wide variety of life, including some top predators for the region, as well as migratory birds, and endangered species. Despite these very important biodiversity and environmental health indicators, the report concludes that the residual effects of the demise of close to 800 ha of land and the added operational pollution, are not significant; even while admitting that the majority of impacts are adverse and some non-reversible. This not only reflects the proponents disregard for what is a sustainable healthy environment, which brings doubt to its sustainable and environmentally friendly mission, but also shows the lack of ethical principles in the environmental assessment process.

Nova Scotia' and Canada' history have shown that rural development based on a single non-renewable resource is vulnerable to international markets and can lead to significant socio-economic, health and environmental effects for future generations. The assessment of cumulative effects should not be limited to environmental impacts or economic impacts of one or two generations, but should look at multiple generations and at all aspects that fall within the responsibility and the burden of the municipal, provincial and federal governments.

The Ecology Action Centre rejects the conclusions of this EIA because:

- the lack of in depth analysis of the projects' impacts does not support its conclusion that there are no significant residual effects
- the inconsistency in its estimate of both benefits and adverse effects prevents a proper analysis of the impacts
- the lack of information about mitigation measures, including compensation and rehabilitation plans, and cumulative effects do not permit verification of total impacts and residual effects
- the lack of a detailed health risk assessment prevents assessment of long-term impacts

The Ecology Action Centre cannot support the Keltic Project because:

- the short-and long-term adverse impacts to the immediate area and the province are not balanced out by the limited benefits that will remain within the province.
- the project will have negative impacts on the environment and human health in the short and long term, thereby increasing Nova Scotia long-term social and environmental burden.
- the project will not help Nova Scotia meet its energy goals but add to its vulnerability to international energy market pressures.
- the project's nature, scale and industrial requirements do not fit into the nature, size and provisions of the Country Harbour area in light of the lack of industrial history, infrastructure and development in, or near, the proposed site.

Nova Scotia's relatively undisturbed coastline is one of our biggest assets. Large scale projects, such as this, disrupt natural coastal processes; lower their productivity, reduce tourism potential and make coasts more vulnerable to impacts of climate change. We should consider cumulative impacts on coasts and opt for integrated coastal planning first, before accepting such projects. Nova Scotia needs a meaningful province wide coastal planning policy if our coastal environments and communities are to be sustainable and grow.

Recommendations

A) We recommend that the proposed Keltic Petrochemicals Inc. LNG and Petrochemical complex not be approved by the province and the federal governments.

Instead we recommend that:

- The province should take a proactive strategic environmental assessment approach to development, and move away from the current reactive environmental assessment approach.
- The province should follow the intent of its Energy Strategy and seek to develop aggressively its renewable energy resources and reduce consumption, rather than develop a reliance on imported energy sources.
- The province should accelerate the development a coastal strategy to achieve integrated sustainable development of Nova Scotia's coast.
- The provincial, federal and municipal governments and financial institutions should work with local residents to focus efforts on community based sustainable economic development that are tied to the history, culture, knowledge and natural local resources of the area.
- The Dung's Cove - Red Head Point site should be developed into a Heritage site and be part of an overall heritage resurrection plan for developing the area's history to attract tourism, researchers, and create jobs for the descendants of those who created those communities.
- The province should invest more infrastructure funds into making Guysborough County's coast more easily accessible to encourage tourism, local travel and business opportunities.
- The province should formally protect the publicly-owned roadless wilderness areas near Goldboro using the Wilderness Areas Protection Act, to encourage sustainable development and promote nature-based tourism along the Eastern Shore.

B) The province should require a thorough health risk assessment of the impacts of the petrochemical facility and attached components on the people living in the surrounding villages and for the future generations that will be exposed to contaminants in the air, water and soil.

C) The province should help monitor public participation, consultation and comments about the project to ensure that all parties have an equal voice in the process.

D) The province should require cumulative impacts of industrial development at, or near, the Goldboro site (including the Ocean Lake Wilderness) to be properly examined and considered through the environmental assessment process.

E) If the project is approved the proponent must develop a full range of compensation plans which should be made public and open to discussion.

F) If the project is approved, the proponent should put an appropriate cash amount, based on consultation with the province, municipality and major stakeholders, into a Trust account which would ensure that decommissioning and rehabilitation of the site in the case the proponent lacks the financial means to do so at the time of decommissioning.

G) If the project is approved, the province and municipality should make any concessions or tax benefits to the proponents publicly known and open for review by an independent panel.

References

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