# The Mackenzie Gas Project Proposal: Critical Socio-Economic Impacts and Alternatives

## Brief to the Joint Review Panel for the Mackenzie Gas Project

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Alternatives North

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# 1.0 SUMMARY

This brief raises several concerns about the socio-economic impacts of the proposed Mackenzie Gas Project (MGP or the Project) on development in the NWT, especially the sustainability and distribution of benefits. These concerns are informed by my work over several years on economic development, distribution and living standards in Canada, particularly in mining communities and resource-dependent regions.

Topic 16 for the Joint Review Panel, "Sustainability and Project Contributions," addresses "whether Northerners will be better off as a result of the MGP, whether net benefits are sustainable, and the distribution among individuals and communities of the costs and benefits of the proposed Project" (JRP 2006).

In short, this brief's response, elaborated in the following pages, is that overall the proposed Project will not leave the NWT better off. It will not lead to sustainable economic development or sustained net benefits for most of the territorial population. It will increase inequalities in the distribution of jobs and income, particularly relative to more sustainable development options. The proposed Project has an extremely high opportunity cost for the NWT's people, particularly its future generations. This is in part because the planned export and rapid exhaustion of the resource would cut off more sustainable paths of development. This is not to oppose all development or use of the natural gas resource. Rather, it is time for a more sustainable, equitable and inclusive path of development.

## *1.1 Relationship of the Brief to Topic 16*

Topic 16 includes a wide range of questions. In the sections that follow, this brief concentrates on the following issues or themes:

**Section 1** provides an overview of the context for this Project including:

- concept of sustainability,
- the typical presentation of export oriented and resource based development in hinterland areas,
- the current approach to the MGP and
- the pressures this project faces from globalization.

**Section 2** discusses the pace of extraction, which is driven largely by the technical and investment conditions of the proposed project rather than the needs of the region. This is relevant to several Topic 16 questions, including:

- the "maintenance and enhancement of livelihood capacities,"
- the inducement to additional hydrocarbon extraction,
- the magnitude of boom-bust effects and closure effects, and, not least,
- "longer term possibilities for sustainable livelihoods."

**Section 3** discusses employment impacts in the short-term, primarily for the construction phase of the proposed Project. Although it involves a massive amount of construction activity, the proposed Project would bring a low level of local employment benefits and even these are inadequately defined in their amount and in terms of equity requirements. This relates to the questions of:

- the "maintenance and enhancement of livelihood capacities,"
- the magnitude of boom-bust effects, and
- to leaving future generations with better or worse prospects.

**Section 4** discusses the proposed Project's longer-term employment impacts. For such a magnitude of investment, and given the non-renewable character of the resource, the direct and indirect employment gains for the NWT are remarkably low and inadequately defined in their number and in terms of equity requirements. As well, the limited employment benefits are not likely to go to areas more in need. This has negative implications for regional inequality within the NWT. These points relate to the question of the "maintenance and enhancement of livelihood capacities," as well as to leaving future generations with better or worse prospects.

**Section 5** considers the issue of value-added uses of the resource and the failure to provide for diversification and secondary employment and research. This relates to the questions:

- "Is the Project and the gas it will transport needed more now ... than it might be in the future?"
- "What practical means are available ... to extend to the life of hydrocarbon extraction, transportation and related activities in the Project area,"
- "maintenance and enhancement of livelihood capacities,"
- to leaving future generations with better or worse prospects, and
- to "longer term possibilities for sustainable livelihoods."

**Section 6** treats the issue of energy policy. Energy policy is key to environmental sustainability and to economic development, especially for a hinterland area struggling to increase and diversify employment and improve opportunities and living standards in all communities. As proposed, the Project will have a long-term negative effect by restricting the capacity of governments in the NWT to use the local abundance of natural gas to benefit directly the local population and as a means to stimulate secondary economic development. As with Section 5, this relates to the questions and issues:

- "Is the Project and the gas it will transport needed more now ... than it might be in the future?"
- "What practical means are available ... to extend to the life of hydrocarbon extraction, transportation and related activities in the Project area,"
- "maintenance and enhancement of livelihood capacities,"
- to leaving future generations with better or worse prospects, and
- to "longer term possibilities for sustainable livelihoods."

**Section 7** examines aspects of the distribution of resource revenues for the proposed Project. It argues the likely flow of resource rents to the NWT is inadequate, ill-defined, and not a reliable and predictable basis for autonomous development and policy. Further, there is inadequate definition and provision for funds for post-closure bridging and general development objectives. This relates to questions already noted as well as:

- "Is the end of the Project (and associated activities including revenue flows) likely to leave future generations in the communities of the Project area and in the NWT with better prospects or worse prospects than they would have had without the Project?",
- "Will the end of the Project leave deficiencies and problems that would have to be assumed by Canada, other governments or authorities beyond the Project area?"
- Does the project provide bridges to sustainable livelihoods and
- how might "programs and other initiatives be affected by different assumptions about the size, direction and timing of revenue flows?"

**Section 8** reviews the key justifications and flaws of the project and how these need to be viewed in the current historical context of rapid change and greater risk in environmental and economic conditions. The Project should be halted given its overall risk and ill-defined benefits as well as its likely opportunity costs, especially for future generations in the NWT. This relates to several of the above questions as well as, in particular, "What are the alternatives to the Project, including not proceeding with the Project now, and are their effects to be more beneficial or less beneficial and to have higher or lower risks in the Project area and larger region?"

**Section 9** provides an alternative vision and recommendations.

## *1.2 Context*

### 1.2.1 Concept of Sustainability

The concept of "sustainability" figures prominently in several of the Joint Review Panel's topics and questions. As defined under the Auditor General Act and taken from the Brundtland Commission, sustainable development means "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." As is well known, specific conditions or measures of sustainability are often more difficult to agree to in practice. Mining or oil and gas extraction is particularly contentious as it is relatively short-lived. A mining industry working group (MMSDNA 2002 as cited in Gibson 2006: 48) refers to principles guiding sustainability assessments of the "full life of mining projects." Such definitions do not necessarily refer to the sustainability of social well-being in the project area after the exhaustion of the resource. Hence, there is recognition of the need for an explicit discussion of closure impacts and bridging, for example, through diversifying industrial development or establishing closure or Heritage funds. This brief considers sustainable development to be long-term development including the years after closure or resource exhaustion. It suggests in several sections the need to

scale down the rate of resource exhaustion, for example, in treating the consequences of rapid resource extraction, which is not sustainable development.

### 1.2.2 Resource Development for Export

Regional development based on externally owned and controlled primary resource extraction for export has a long and difficult history (some aspects of this are discussed in Appendix A). Such development is not like other forms of economic development. Especially in hinterland regions, development of non-renewable resources for export requires, as a minimum, 1) carefully defined and transparent objectives, 2) empowered local leadership and control, including ownership, and, 3) careful monitoring of agreements and impacts to assure a positive and lasting economic legacy. For hinterland regions, the benefits of such resource development are far from automatic, in particular, they are less likely to "trickle down" to the population.

Typically, the lack of control, limited diversification, higher levels of unemployment, poverty, and inadequate education and research capacity make hinterland areas weaker in their bargaining power and more vulnerable to crisis or arbitrary policy. Further, once wage-dependency has become an established structure, the social costs to the population of decline, closure, recession or other crises are much higher. The pattern has been repeated again and again across Canada and elsewhere. Whether it is Buchans, Cape Breton, Schefferville, Kirkland Lake, Elliot Lake, Lynn Lake, Uranium City, Grande Cache, Turner Valley, Crowsnest Pass, Tumbler Ridge, Kimberley, Port Hardy, or similar resource-dependent communities, many smaller and barely known, the socio-economic damage has been great and the positive local economic legacy left has been very little. As Weaver and Gunton (1986: 217) have concluded: "Massive resource exports do not equal economic development."

With the proposed MGP, one is not talking about economic development in general but about a particular, characteristic type of project or development. It is a now classic type: the externally owned, capital-intensive, resource-export mega-project, or export-dependent resource development, for short. The key economic characteristics of this type of development in terms of its income and wealth distribution impacts and tendencies are that there is:

- overwhelming external ownership and control,
- a rapid rate of extraction of the non-renewable resource,
- a near exclusive orientation to export of the resource in a primary form,
- no substantial upstream or downstream manufacturing linkages or research in the host region, and
- a low labour/capital ratio for the investment in the host region.

Further, there is no defined accountability for or clear provisions to deal with increased regional imbalances, dislocation, and mitigation failures. Such a type of project puts it at the extreme opposite end of the range of projects with a likelihood of higher and more broadly distributed benefits to the regional or host population.

In terms of the economic development of the host area, it is crucial to know if and how the economic activities associated with the mega-project are integrated (or not) into the host economy. The proposed Project can also be viewed as an enclave form of production in that:

- it is largely externally owned and controlled,
- it is importing capital and skilled labour to do the installation,
- the ongoing exploitation of the resource is organized largely for export for use elsewhere, and
- there are very limited employment, training, research or direct industry linkages (associated value-added industries) in local areas.

In short, the orientation of the Project is towards economic activity elsewhere, and host-area development is incidental to this. The main argument for such a project appears to rest on an expectation of much increased resource revenues or resource rents (although in the MGP case those foreseen for the NWT are far from guaranteed or clearly defined). The history of hinterland resource development is that the allocation of such resource revenues tends to follow or replicate the dominant distributional patterns and political priorities, which are weighted heavily against hinterland people. So not a lot of locally based, diversified or equitable economic development usually happens or should be expected from increased resource revenues alone.

### 1.2.3 Typical Pattern of Export-dependent Resource Development

Such mining or oil and gas projects in remote or hinterland areas have a typical pattern or narrative. Initially, the project precipitates a short-lived boom period while much of the labour and equipment is imported and the project and infrastructure is built. There is some increase in local employment, though not necessarily for the better jobs. Wages and living costs, notably for housing, rise. The outside corporation soon establishes its power and the full meaning and details of the negotiated terms of agreements start to be felt and understood by communities, local businesses, and labour.

When construction and the set-up are completed, many workers and some businesses move out. The outside corporation establishes and adjusts its operation and maintenance regime. Demand and employment decline. The wages of those working for the outside corporation are higher, but they are enjoyed by only a limited portion of the local population. Women, Aboriginal people, and disabled persons are still not equals in the corporate workplace. The communities' average wages rise but this masks that there still remain many, often a majority, with lower wages, and unemployment remains substantial. There is increased social division in communities, typically by class, gender, and race. Among local business suppliers there can also be division, often over issues of arbitrariness and favouritism by the outside corporation, though much of this conflict happens below the radar for fear of economic reprisals.

Over time, the outside corporation finds and implements "efficiencies," such as through increased automation and subcontracting, which reduces employment. At times, this can be a factor leading employees to seek unionization. When it occurs, unionization limits some

arbitrariness and insecurity, and improves wages and benefits for those within the employ of the outside corporation. Better contracts also increase local demand with some positive effect for local retailers and services, but generally the effects are not large enough to bring major improvements to employment or distribution in communities or the region as a whole.

As part of its public relations activity, the outside corporation makes small but high profile donations and sponsorships to curry favour with local community groups. At the same time, massive profits are being sent south. Periodically there are community voices raised about environmental issues or the lack of local benefits to communities. The provincial/territorial or regional government claims that the resource revenues are lower than expected, or that they have been absorbed in on-going expenditures or tax reductions, or that they have been used to cover federal government cuts to programs. The federal government says these are difficult times for everyone and they are doing their best to stimulate economic development through tax cuts and occasional grants. Many believe that part of the resource revenues are squandered in lavish administrative costs and that they were "sold out" in the policy negotiations around the project.

As the resource continues to be exported, little changes in terms of distribution. Younger people leave communities for opportunities elsewhere. Industrial diversification, as perceived by most people, does not occur. There are ongoing complaints about the high cost of energy and the lack of support from higher levels of government for economic development.

At some point, often sooner than expected, the resource is exhausted. The political leaders who are presiding over the scenario declare that there is little they can do now and that the eventuality of closure was known for a long time. There is a flurry of closure preparations, some insubstantial negotiations, a few agitated community and union meetings, exaggerated government claims about the benefits of retraining to rectify the job loss, and a few inadequate emergency grants, which some call hush money. Depression sinks into communities, who face falling average incomes, lower rates of employment, higher unemployment, more consumer and business bankruptcies, and increased long-term poverty, family breakdown, social problems, economic dependency and out-migration. The costs of employment losses and closure are borne by individuals, communities (usually with a population older and less mobile), and by governments, while the outside corporate owners continue to make profits--elsewhere. The positive economic legacy left to the communities is negligible. More people are leaving. Political life becomes more fractious and bitter. The land is exhausted of the resource, and often visibly scarred.

This scenario is in contrast to some pipeline hype. Unfortunately, the current golden glitter of a resource boom is encouraging exaggerated expectations and overshadowing serious difficulties. Oil, natural gas and mineral prices have been rising and are at historic highs, as are the profits of resource corporations, and long-term consumer and industrial demand continues to increase in the face of known and accumulating environmental crises. A

corporate scramble[1] for ever dwindling reserves of oil and natural gas has come into conflict not only with the environment but once again, three decades after the Berger Inquiry (1977), with the question: which development strategy for the NWT?

### 1.2.4 Current Approach to the MGP

Under the pressures of billion-dollar corporate investments, and a federally-funded half-billion dollar socio-economic impact fund, greater attention is being drawn to the short-term and to "mitigating" the impacts of a likely deeply disruptive construction-phase boom, though a perceived boom nonetheless. To mitigate means "to alleviate or give relief from (an illness or symptom, pain, suffering, sorrow, etc.); to lessen the trouble caused by (an evil or difficulty)" (OED). As in the health field, the absence of disease or illness is not the same as health: economic and social development is not the same as "mitigation," which is actually a very low standard for any project proposal. No less serious attention is due the analysis of long-term and cumulative socio-economic impacts, those beyond construction, including those from exhaustion of the resource, which many of us could witness in fewer than 25 years.

My general conclusion about the proposed MGP is that, overall, the longer-term socio-economic impacts have not been adequately addressed and the proposal is fundamentally flawed. This is partly a function of the particular proposal but also a function of the general nature of this type of project. The economic and social policies and commitments necessary for long-term or sustained development for the NWT are either inadequately formulated or not in place. If there is a desire to set up the Project to benefit the NWT, this is not the way to do it. The Project should be halted.

### 1.2.5 Pressures of Globalization

The argument that follows may appear to echo points made during the Berger Inquiry three decades ago, which recommended a halt to the Mackenzie Valley Pipeline, at least for ten years. Since that time, some development conditions persist and some have changed. One major change is the current pressures of globalization that make hinterland development more difficult to achieve than in the 1970s or earlier decades. As will be noted in Section 8, this new period has seen higher levels of resource-industry corporate concentration. We are also seeing labour-reducing productivity growth, deteriorating hinterland living standards, increasing social inequality, and community stagnation and decline. Without a strong development policy to counter adverse socio-economic impacts, the NWT is actually less likely to see benefits, such as a substantially higher degree of economic diversification, social and regional equity, or sustainable employment for the coming generations. The

[1] As Calgary-based energy economist Peter Tertzakian (2006: 245) observes: "Oil reserves all over the world are maturing, so the pool sizes of those reserves are becoming smaller. The large elephant fields are becoming increasingly scarce and remote. The super-majors like ExxonMobil, Chevron, and Shell are abandoning mature fields and chasing whatever elephants remain because they need to offset their massive production declines and grow their output to satisfy their shareholders. This trend has been particularly strong in the United States and Canada because we've been exploiting our reserves for 145 years, but it's also happening in places like the North Sea."

"mixed economy" (traditional economy) will also be impacted. It needs to be consciously supported if it is to continue as an important part of any development strategy.[2]

My focus here, though, is on the impacts and structures of export-dependent resource development, particularly the inadequacy of intermediate strategies (between mega-project and doing little or nothing) associated with the MGP proposal. Here lies the greatest opportunity to move towards more sustainable, inclusive, and equitable development and to support alternative and smaller-scale, regionally oriented options.

# 2.0 PACE OF EXTRACTION CONTRARY TO SUSTAINABILITY

From a long-term development perspective or sustainability standpoint, the period proposed for construction and operation of the MGP is rapid, and could be even shorter than assumed. This is not in the interest of the people of the region nor of the environment.

The three anchor fields have total gas reserves of 5.8 trillion cubic feet (tcf). Composed of Niglintgak (1 tcf), Parsons Lake (1.8 tcf), and Taglu (3 tcf), they are likely the most accessible of possible Arctic gas fields with the lowest transportation costs. The EIS document suggests these reserves could be gone in 25 years or possibly 27 years for Taglu. For the proposed 30-inch pipeline, at an initial flow level of 0.9 bcf per day, the anchor field reserves could be gone in under 18 years. The gathering system is expandable to 1.9 bcf/day (NWT Energy Facts). At this capacity flow, the gas could be gone in under 8.5 years.

The scale of the project creates its own pressures for further and rapid exploitation of the resource beyond the three anchor fields. Even if, as is widely supposed, other gas fields are proven and gathered into the pipeline, the proposed MGP pipeline itself is foreseen to have a life of only 45 years. Suppose, this lifespan is extended by a third, say, to 60 years which would spread the capital costs over more throughput. These magnitudes are still not long or sustainable in any meaningful sense–only two working generations or less.

What does such a rapid exhaustion of this valuable, irreplaceable resource mean? To begin, the current approach suggests there is no independent interest or need in the NWT for a secure, long-term source of gas supply for its own use or future development. Resource revenue payments are not necessarily an adequate substitute for such a secure local supply. As a precaution it would be more beneficial and prudent to preserve a portion, say half, of the reserves exclusively for long-term regional development by allocating the exploitation of certain fields (preferably closer ones) exclusively for regional use.

[2] A considerable amount of work has been done on the "mixed economy" and has been presented to and is available to the Review Panel, such as Abele (2006, including references) and Usher (1993). The latter discusses what has been learned about the importance of social impact assessment since the Berger Inquiry, particularly on the differential effects of industrial development in the North: "It is now widely recognized that industrial development in the Canadian North has the sharpest effects on the small, largely Native communities (of which there are at least 200 in the Arctic and subarctic), because of their socio-economic characteristics, and the cultural and historical forces that created them, differ significantly from those of southern Canadian communities, rural or urban"(1993: 117).

Second, such rapid extraction and use flies directly in the face of concerns to limit and reverse the currently increasing level of greenhouse gas emissions. For example, in the MGP proposal there are no guarantees that the NWT resource will be used exclusively to replace dirtier fuels so as not to add further to the greenhouse gas burden. At very least, much lower rates of extraction should be required together with a principle such as carbon neutrality, until there is clear international policy agreement and progress towards reversing the human contribution to the climate change crisis. Such a policy could be monitored by a joint Federal-Territorial-Aboriginal regulatory body. Its specific purpose could be reporting on and enforcing regional emissions limits through restrictions to or abatement surcharges on territorial exports.

Third, given continuing scientific and technological change, there is great likelihood that new, value-added and lower impact processes and uses for natural gas will be devised. Rapid exhaustion of the resource means that the NWT will have lost such opportunities, such as the participation of future NWT researchers and business enterprises in their development.

Fourth, it is not simply that this natural gas is a valuable non-renewable resource, it is also relatively a more accessible and inexpensive energy source for existing population centres in the NWT. If the Government of the NWT (GNWT) or local populations in the North were to decide to use gas for heating, transportation or stimulating secondary industrial development, they would have more flexibility to do so the longer the gas stays in the ground and is uncommitted to export.

Fifth, as will be mentioned later, a less rapid rate of construction and extraction, would permit the training of more of the local workforce and reduce extreme employment and spending swings–as well as the consequent busts, dislocation and socio-economic adjustment costs.

Sixth, the time-frame is disturbing, particularly for future generations, in terms of research capacity and higher-level skill development, which are crucial elements of long-term development. It takes a long time to educate, provide continuing opportunities, and to maintain an advanced workforce, particularly the highly skilled workers, scientists and professionals who are needed for self-generated economic development. For instance, a research scientist in water resources, agronomy, linguistics, or medicine, taking a straight-line through the educational system has 6 pre-school years, 12 years in school, 4 years for an undergraduate degree, perhaps 6 years for a master's degree and PhD, and 2 years of postdoctoral studies–that is, about 30 years and often longer. So, for a child born in the NWT tomorrow, the anchor-field natural gas and any future wealth associated with it would be exhausted, before this new scientist could even start work, even supposing there was a job. Further, higher-level research and education in resource-dependent regions is generally less available and developed, something that is made even more difficult to overcome by shorter horizons in resource extraction.

The economic logic for pipeline developers is that, for any given pay-back period or project lifespan, the larger the capital outlay, the more natural gas must flow. This means a faster

rate of extraction for any given reserve. Other factors equal, the larger the project the more pressures for rapid resource exploitation. While a larger scale project and rapid extraction may be in the private economic interest of the developers, it is by no means necessarily in the public or long-term interest of the population or government of the host area (as the above points suggest). In the tension between the private interest of the developer and the societal interest of the NWT, my view is that the rate of extraction of the Project, is tilted sharply towards the external private interest and against the territorial interest.

# 3.0 EMPLOYMENT IMPACTS IN THE SHORT-TERM

The proposed MGP has employment impacts of two main types, short-term for the construction phase and then an operations phase for the life of the pipeline. There is also a view that a third level of employment benefit would inevitably occur from the substantial resource revenues, which I will discuss later.

The proposed construction is massive, yet there appear to be relatively few local benefits that are integrated into and take seriously the employment, training and equity needs of the region. The construction phase of the project in the NWT is proposed to happen during four winter construction seasons with an average of 84 days per job (Ellis 2007: 1) or about four months each. That is, approximately 16 months of employment over four years. The workforce will be drawn overwhelmingly from outside the NWT, and possibly outside the country, and housed in construction camps intentionally designed to minimize interaction with local communities.

The direct employment for construction of the project is estimated to average 5,707 jobs per year with a peak in the second year at 7,238 jobs (Ellis 2007: Table 2-7). For the total of direct, indirect, or induced employment, the proponents estimate average employment impact of 28,145 jobs per year peaking in the second year at 33,197 jobs (Ellis 2007: Table 2-10). The 2004 EIS reduced their estimate downwards by over a half for "labour supply constraints," which were not fully detailed (Environmental Impact Statement 2004, 6-5). In its 2007 update, Ellis Consulting is less clear about their assumptions. Direct employment in the construction for territorial residents still turns out to average only 1,162 jobs per year or for each of the four years: 463 (2010-11), 1,494 (2011-12), 1,368 (2012-13, and 1,322 (2013-14). So the direct (and likely highest paid) construction employment for the NWT is only about 20 percent of the direct jobs and 6 percent of the total jobs. Further, the direct jobs are seasonal–hence, likely without regular personal and family fringe benefits.

The suggestion of labour supply constraints in the 2004 EIS (like the notion that "everyone who wants a job has one") is highly subjective and depends on the time frame and source areas considered. If there is sufficient lead-time for training and education, the skill or quality supply constraints for more skilled workers are possible to overcome. As for the numbers of available workers, the employment rates (key to labour supply availability) in the NWT are skewed by the impact of Yellowknife, which pulls up the average with its very high employment rate (see tables in the next section). Outside Yellowknife there is considerable room for expansion of the labour supply, particularly if appropriate incentives

and training are provided and there is a reasonable prospect of ongoing employment over an extended period.

The MGP Socio-Economic Agreement signed by the GNWT does not set firm minimum quotas but simply observes that "**up to** [emphasis added] 16 percent of direct employment opportunities during Construction ... **could** [emphasis added] be filled by Aboriginal Persons and NWT Residents" (clause 2.1). Depending on the base of the calculation this could be even fewer jobs than the 1,162 average per year.

There could be much said here about the need for specific and independently monitored quotas or other requirements relative to employment and training. Business approaches to production and finance are fond of emphasizing outcome-based standards and indicators over process-based ones. Yet in the MGP proposal and most discussions related to it, what one reads or hears about are not hard commitments or outcome goals for jobs and training. Rather there are statements about intentions and financial contributions to various organizations and activities. Canadian and US experience suggests that outcome requirements in the form of employment equity (as it is termed in Canada) or affirmative action (as it is termed in the US)–quotas–do work to help overcome inequities.[3] Evidence shows that such policy action is also required for community or area-targeted employment initiatives.

For instance, US research on job creation projects in urban areas has used the concept of "job chains" to show that such projects do not necessarily provide jobs for the communities or areas intended (Persky 2004). When new jobs, particularly ones requiring skills or experience, are created in an area, the tendency is for workers to be drawn from other employers, and these vacancies in turn to be filled by outside workers. There is no automatic "trickle down" of new jobs to local people.

## *3.1 Barriers to Short-term Employment*

The situation is made even more difficult if barriers of skill and experience are compounded by barriers of race, gender, disability, or language. Without strong, independent monitoring backed by legislative or contractual force, including financial penalties, one can predict there will be no major increase in the number and skill levels of Aboriginal, resident, female and disabled workers in construction trades in the NWT.

This situation is even more difficult when dealing with industries with a long history of particular biases in employment and training. For the proposed MGP, the two industries most involved, oil and gas and construction are, for example, overwhelmingly male dominated. According to the 2001 Census, the oil and gas industry had only 16 percent females in all occupations (including clerical and office) in the industry. In construction, women were only 12 percent in all occupations in the industry and only 3 percent specifically in construction.

[3] See, for example, Benjamin et al. (2007: 391). In Canada, employment equity legislation exists under federal jurisdiction and for the federal public service.

The proposed construction plan is a major disincentive to serious and ongoing territorial training and education initiatives for skilled trades. Short lead times and work periods and discontinuous work will disadvantage unskilled workers who desire to train up to skilled trades or upgrade their formal educational level.[4] To develop a higher skilled workforce requires not only training but ongoing work opportunities and upgrading. Short lead times and discontinuous work makes it less likely that recruiting, training, and employment will accommodate cultural, gender, and disability needs. Workers who do get trained to higher skill levels but then only get limited periods of work will lose skills and not be able to upgrade. Those who are younger with fewer family responsibilities could leave the NWT to find work, thus defeating much of the purpose of investing in local skills training. The construction conditions proposed are also biased against women going into skilled trades as women tend to be less free to travel due to a higher level of family responsibilities than most men.

Without strong, independently monitored quota requirements, it is predictable that what occurred with the Norman Wells expansion in the 1980s and has occurred elsewhere will repeat itself. Local people will be shunted into less skilled and secondary jobs, and be paid less than expected, with bitter consequences. Moreover, even when formal agreements effectively exclude local people from the more skilled and higher paid jobs, it is still often a common expectation among local workers that, on their land, they should have this opportunity.[5]

## *3.2 Impacts of Closure*

Then there is the period after construction is completed. There is a great deal of evidence about the impacts of closures and downsizing in hinterland areas (such as Leadbeater and Suschnigg 1997). In the absence of local employment opportunities, many local people, especially those with financial obligations and experience, leave the area and even the region. There is family turmoil and dislocation. Consumer and business bankruptcies shoot up. Protracted unemployment and economic dependency increase. Social problems, including suicide, increase and social polarization is aggravated. Of course, governments may claim concern and throw in some money for retraining, job search, a few make-work jobs, and, for the better educated, a few office jobs helping to administer the bitterness and social mess left. In high unemployment conditions, the retraining helps re-employment for only a minority of workers (education, which costs more, does somewhat better). Sadly, retraining that fails to lead to jobs can undermine understanding and commitment to the long-term importance of training and education for social and economic development.

[4] Apprenticeship requirements vary by trade and by jurisdiction, though typically higher skilled and paid trades require three to five years of fairly continuous work and study. The NWT Apprenticeship Program advises: "It will probably take from 2 - 4 years to complete your apprenticeship, depending on the trade. Each level of apprenticeship takes approximately one 12-month period of no less than 1800 hours of employment, including the time spent at technical training" (at http://www.ece.gov.nt.ca).

[5] James Evoy of the Labourers Union reported (1985): "Even though the socio-economic agreements and bid specifications restricted employment on the mainline to only a few Northern people, it was these high-profile and well-paying jobs which local residents wanted and had expected. The socio-economic action plans visualized Northerners filling sandbags, manufacturing skids, slashing the right-of-way and other menial tasks off the right-of-way, but didn't mention the minimal pay, lack of fringe benefits and sub-standard accommodation."

If the MGP must proceed, I would urge consideration of alternatives to increase employment and training opportunities. Dennis Bevington, MP for the Western Arctic (brief of December 5, 2006) suggests reorganizing construction to occur on a continuous, year-round basis, with a smaller number of workers and a higher proportion of local participation in higher skilled jobs. As discussed next, this could also permit a more rigorous and successful incorporation of equity goals. Of course, the environmental and other consequences of this proposal need to be considered.

## *3.3 Inclusion and Equity*

Not only is there the issue of the total quantity and quality of jobs created, there is also the matter of who fills them. Issues of inclusion and equity in opportunity are no less important. The NWT population is approximately half Aboriginal and half female, but there is still a major distance to travel to achieve an inclusive workforce with equitable employment and education opportunities.

Though the gap between the employment rates of Aboriginal and non-Aboriginal persons has been reduced by over 10 percentage points since the 1980s, it is still very large. As of 2005, 55.1 percent for Aboriginal people compared to 83.4 percent for non-Aboriginal people (NWT Bureau of Statistics 2006). The NWT 2004 Community Survey observed the unemployment rate for Aboriginal men at 25.6 percent compared to 4.0 percent of non-Aboriginal men, and 14.9 percent for Aboriginal women compared to 3.6 percent for non-Aboriginal women (Abele 2006).

The employment gap between women and men fluctuates but has been reduced to 70.7 percent for women compared to 73.8 percent for men, in 2005 (NWT Bureau of Statistics 2006). Major progress is still needed for the inclusion of women in higher-paid and traditionally male-dominated occupations. The NWT Bureau of Statistics does not appear to report on the employment situation of persons with disabilities.

Rather than setting an independent and stronger standard for regional labour force development, the MGP proponents and current GNWT are taking a step backward. The GNWT's own affirmative action policy has established designated equity groups, comprised of "Indigenous Aboriginal Persons, Indigenous Non-Aboriginal Persons, Resident Disabled Persons, and Resident Women." Yet for the proposed Project, disabled persons and women are omitted as designated groups by the proponents and the Socio-Economic Agreement (SEA), and any serious commitment to affirmative action is absent. Another serious flaw is the definition of a "NWT resident." For the SEA, it is someone who "primarily resides in a self-contained domestic establishment" - in other words, anyone (without any minimum stay) who can find a NWT residence to live in before applying for employment. By contrast, the GNWT's own Affirmative Action Policy defines the resident group as "persons born or who have lived more than half of their lives in the NWT." Further, about 30 percent of the Public Service (of 4,070 employees) is Indigenous Aboriginal and 14 percent is Indigenous Non-Aboriginal (resident), levels far higher than proposed or accepted by the GNWT for the MGP.

This is not simply a public sector versus private sector issue. The Ekati diamond mine (BHP Billiton Diamonds) has about 800 direct employees and 600 contractor employees (2003 Annual Report) and reports its Northern Aboriginal employment at 38 percent and its total Northern Resident employment at 77 percent, while contractor shares are at 16 percent and 35 percent, respectively. Ekati has no similar level of reporting or commitment with respect to women or to people with disabilities.

I note these points not to assess particular employment targets but to highlight how limited and lax is the general approach of the proponents and the GNWT to a very serious and cumulative impact and economic development issue: the recruiting, training, educating, and maintaining of a skilled, integrated, productive, and confident labour force. This serious problem must be addressed not only in the longer-term operation phase but also in the short-term construction phase. Under strained construction situations the pressures are much greater to relax and jettison even limited equity objectives.

In short, consciously planned, concerted, consistent efforts, backed up by legislative or contractual measures, are needed by government, employers, and unions, not only for general reasons of social equity, but also to achieve specific, positive and cumulative socio-economic impacts. These are not present in a serious way in the proposed Project.

# 4.0 LONGER-TERM EMPLOYMENT IMPACTS

The long-term direct and related employment impacts are remarkably low, unacceptably so, in my view, relative to the magnitude of the project, and the valuable and non-renewable character of the resource. Even these paltry employment benefits are inadequately defined in their number and equity. Furthermore, it is unlikely they will benefit areas of the NWT most in need.

Direct long-term employment for project operations, ongoing construction, and maintenance is about 205 full-time equivalents (Ellis 2007: 2-26). This is made up of the Inuvialuit Settlement Region (37 jobs), Gwich'in Settlement Area (131 jobs), Sahtu Settlement Area (25 jobs), Deh Cho Region (13 jobs) and for Industrial and Commercial Centres (no direct jobs) (Ellis 2007: sections 4-8). Ellis Consulting estimates there will be 648 direct, indirect and induced jobs based on spending that averages $293 million per year, which also includes delayed construction activities in 2015-2017. This is a project whose starting capital expenditures were estimated in 2004 at over $7.7 billion and now are estimated at $16.2 billion, and which could exhaust a valuable non-renewable natural gas resource in the anchor fields within 25 years. This may testify to a very high level of efficiency in gas extraction and transport, but it simply does not address Northern economic development, particularly the need for long-term or sustained employment.

First, in terms of the quantity of employment, it is useful to compare the employment impacts of some other investments, such as in the mining industry. Table 1 shows how dramatically low the projected long-term direct employment impact of the MGP is compared to other large-scale projects in the NWT (note: capital expenditure in the table is stated in 2006 dollars). By including long-term indirect and induced employment (a change from 205

to 648 jobs), the capital/labour ratio goes from about $79.0 million per NWT job to $25.0 million per NWT job, still far below the range of other capital investments.

Not only does the project propose few and costly jobs, there are no guarantees on how those jobs will be distributed, particularly in terms of education, training, or equity in hiring. Again, the Socio-Economic Agreement signed by the GNWT has the weak, unenforceable wording that "up to 72 percent of direct employment opportunities could be filled by Aboriginal Persons and NWT Residents." So we are down to as low as about 148 jobs annually, for Northern Aboriginal people and residents, and these are by no means assured, again, on a project of $16.2 billion that could exhaust a major and proven resource heritage in fewer than 25 years.

The employment and unemployment situation in the NWT is not only highly uneven by race and gender, it is highly uneven by region. I have already suggested that, for labour force development objectives, the MGP proposal and the Socio-Economic Agreement signed by the GNWT is inadequate in terms of assuming the employment prospects of Aboriginal persons, NWT residents, women, and persons with disabilities.[6] There is also the likelihood that it would be inadequate in terms of regional disparities within the NWT. Indeed, it would likely increase them.

Table 2 displays the employment and unemployment rates and economic dependency ratios for several communities in the NWT. I have separated the larger communities into two groups, those likely to be more affected by the pipeline and those less directly affected.

The NWT as a whole has an employment rate that is higher than the average for Canada. The NWT also has a higher unemployment rate, not a typical aggregate pattern. To add to this picture I have included economic dependency ratios. The NWT as a whole, contrary to much popular prejudice, actually has a much lower than average economic dependency ratio for individuals than the average for Canada. This is discussed in more depth in Appendix B. What seems crucial here is not only the racial profile of economic opportunity and unemployment, but also the massive regional inequality of unemployment in the NWT. At the one pole, Yellowknife, with about half the population of the NWT has not only a very high employment rate and a very low economic dependency ratio, it also has a much lower level of unemployment. Yellowknife could still absorb some employment growth, which will continue to increase in-migration, especially if something can be done about its high housing costs.

[6] Similar concerns are noted by O'Faircheallaigh (2007).

**Table 1: Direct job creation impact and capital investment, selected large projects, NWT**

| Project | Capital investment (millions of dollars) | | Employment (direct, annual) (no. of employees) | capital/ employment ratio ($ m per job) |
|---|---|---|---|---|
| | current $ | 2006 $ | | |
| Mackenzie Gas Project (Projected 2007) | 16,200 | 16,200 | 205 | 79.02 |
| Mackenzie Gas Project (Projected 2004) | 7,731 | 7,731 | 131 | 59.02 |
| Diavik Diamond Mine (Rio Tinto/ Aber) (opened 2003) | 1,300 | 1,411 | 700 | 2.02 |
| Ekati Diamond Mine (BHP Billiton) (opened 1998) | 800 | 971 | 800 | 1.21 |
| Snap Lake Mine (De Beers) (to open later 2007) | 975 | 975 | 500 | 1.95 |
| Fort Good Hope Co-op Store | 1.3 | 1.3 | 5 | 0.26 |
| Great Bear Co-op Store | 1.4 | 1.4 | 5 | 0.28 |
| Tetlit Co-op Store<br>Tetlit Co-op Hotel | 0.9<br>0.5 | 0.9<br>0.5 | 8<br>3 | 0.11<br>0.17 |
| Stanton Regional Hospital (opened 1998) | 42 | 62 | 400 | 0.16 |

Note: The adjustment to 2006 (Q3=120.9) prices uses the GDP price index (chain indexes, 1997=100) from Statistics Canada (Canadian Economic Observer). The projections for the MGP (2004) and the Snap Lake Mine are assumed to have incorporated inflation factors.

Sources: MGP: EIS (2004) and Update (2007). For other projects, the respective corporate and government websites and reports. For the Stanton Regional Hospital the employment figure is for the entire Stanton Territorial Health Authority, both full- and part-time.

Yellowknife's employment needs pale by comparison to those of some of the NWT's outlying communities. The MGP as proposed is generally not a good fit with those employment needs, especially given the huge sums being spent. While some affected communities do need more jobs and may receive small employment benefits, the project is not likely to have the overall positive impact in terms of regional or community disparities within the NWT that is implied by advocates. As Table 2 suggests, the less-affected communities tend generally to have lower employment rates and higher unemployment rates than the more-affected communities. (Yellowknife is deliberately excluded from the weighted average, though it might be considered by some to be a more-affected community). With such a mega-project, the employment impacts are fairly predictable. First, following construction, they will be relatively small and go mostly to geographical areas generally better off and to persons with higher levels of education and training. Without strong affirmative action measures hiring will also tend to go to white, prime-age and fully able-bodied males.

**Table 2: Labour market and economic dependency conditions for selected NWT communities, 2004**

| | Population 15+ yrs | Employed | Employment Rate (%) | Unemployed | Unemploy-ment Rate (%) | Economic Dependency Ratio (total) |
|---|---|---|---|---|---|---|
| **More-affected NWT communities** | | | | | | |
| Aklavik | 487 | 207 | 42.5 | 74 | 26.3 | 29.7 |
| Fort Good Hope | 408 | 227 | 55.6 | 55 | 19.5 | 18.4 |
| Fort Simpson | 939 | 612 | 65.2 | 76 | 11.0 | 11.2 |
| Hay River | 2,694 | 1,875 | 69.6 | 206 | 9.9 | 9.6 |
| Inuvik | 2,569 | 1,924 | 74.9 | 155 | 7.5 | 8.8 |
| Norman Wells | 588 | 508 | 86.4 | 14 | 2.7 | 3.9 |
| Tuktoyaktuk | 692 | 313 | 45.2 | 117 | 27.2 | 20.9 |
| Wrigley | 149 | 50 | 33.6 | 30 | 37.5 | 33.9 |
| subtotal | 8,526 | 5,716 | 67.0 | 727 | 11.3 | 12.0 |
| **Less-affected NWT communities** | | | | | | |
| Behchoko (Rae-Edzo) | 1,282 | 448 | 34.9 | 193 | 30.1 | 19.7 |
| Fort McPherson | 580 | 199 | 34.3 | 132 | 39.9 | 19.6 |
| Fort Providence | 628 | 279 | 44.4 | 98 | 26.0 | 25.4 |
| Fort Smith | 1,898 | 1,188 | 62.6 | 107 | 8.3 | 11.8 |
| subtotal | 4,388 | 2,114 | 48.2 | 530 | 20.0 | 17.1 |
| **NWT** | 31,341 | 21,240 | 67.8 | 2,454.00 | 10.4 | 8.7 |
| **Canada** | 24,465,200 | 15,914,400 | 65.0 | 1,265,900 | 7.4 | 16.0 |

Source: Population and labour force data (winter 2004): NWT Bureau of Statistics and Statistics Canada Labour Force Survey--Feb 2004 (for Canada).
Economic dependency data (2004 calendar year): Statistics Canada Small Area and Administrative Data Division. Data unavailable for certain communities. The community averages are weighted by population.

Second, because these jobs will tend to be higher-paid, the income gap between the more-affected and less-affected communities will likely increase. This will attract younger persons in the relatively poorer areas to leave their communities, which could reduce and disrupt these smaller communities' prospects.

I see nothing in the MGP proposal or the Socio-Economic Agreement that gives confidence that these predictable problems will be addressed. There is little more than words of limited intentions about mitigation, which are much less than the needed clear and locally-based development targets. Overall, employment impacts are low relative to the magnitude of the project. No less important, one can expect no major, positive employment impacts towards dealing with the most serious social and regional inequities in the NWT. More likely, inequities would increase.

# 5.0 VALUE-ADDED IMPACTS AND DEVELOPMENT

## *5.1 Secondary Industries*

One of the most disturbing aspects of the MGP proposal, as well as federal and territorial responses to it, is the utter lack of serious commitment or creative thought applied to the issue of secondary industry that might be developed in conjunction with the project. One does not even see a broad discussion of what role the natural gas might be able to play as a factor in stimulating new small- or medium-scale industries. Indeed, between the mega-

project strategy, on the one hand, and continuing to do little or nothing, on the other, there seems to be little or no thinking about any intermediate range possibilities.

Natural gas is used in a multitude of economic activities. In Canada, the largest end-use is actually industrial (about 39 percent, even higher than in the US). Other uses include residential (23 percent), commercial (15 percent), electricity generation (5 percent), and pipeline fuel (16 percent) (for 1997, according to Natural Resources Canada). These uses include not only residential and commercial heating and cooling, but inputs into the chemical industry for plastics, fertilizer, textiles, and the production of other fuels such as propane, and for natural-gas powered transportation. Some of these uses and products have had a dubious history in terms of the environment, but there remain uses and products that might be significantly cleaner and less harmful on the environment than current alternatives.

Both the Federal and Territorial governments have stated publicly their support for economic diversification in the NWT. Indian and Northern Affairs Canada has a modest program, the Targeted Investment Program (TIP), in which economic diversification is viewed as one of the five thematic areas for "strengthening economic foundations" of the NWT. For its part, the GNWT has formulated an action plan (GNWT 2004) declaring that "a healthy economy requires balance and diversification. Economic diversification is therefore a priority to secure the prosperity of our economic future." The GNWT has made some effort to secure value-added elements to diamond mining. Indeed, it is common for governments whose economies have a heavy dependency on primary resource extraction and needs for long-term employment to pursue and negotiate value-added activities as opportunities arise. Yet in the MGP proposal and in the GNWT's response so far, there is a remarkable absence of any serious discussion or research about possible current or future value-added uses of the natural gas. They are not seen as a priority over, or even as a trade-off with export.

The people of the NWT (or Canada) have really not been given any serious development options or alternatives to a virtually exclusive focus on export of their natural gas. If this were the forestry industry, it would be the equivalent of shipping out the raw logs without considering the manufacture of dimensional lumber, plywood, furniture, toothpicks, prefabricated housing, and so on. The people of Newfoundland have had such bitter experience with the careless export of their resources (particularly electricity and fish) that their position has hardened on the massive nickel field of Voisey's Bay. As someone living in Sudbury, I can say there was considerable respect and understanding for the efforts of Premier Williams of Newfoundland to negotiate with Inco a guarantee to refine Voisey's Bay ore within Newfoundland and Labrador. Now one can argue about the particular means and terms of Mr. Williams' agreement, the intentions of the parties, and whether the Government of Newfoundland will actually prevail in its stated objectives. However, few are publicly questioning the right, and indeed the desirability, of a "have-not" area like Newfoundland and Labrador gaining more value-added production on its resources.

It is not surprising that the MGP proponents are not excited by the issue of value-added production. But it is surprising, given their publicly stated concerns about diversification and balance, that Indian and Northern Affairs Canada and the GNWT have devoted so little attention to this question. Only procurement policy seems to have generated any substantial attention. And the results, at least in the Socio-Economic Agreement signed by the GNWT, are vague and unenforceable.[7]

[7] Alternatives North in a pertinent statement issued January 25, 2007 on the release of the signed Socio-Economic Agreement notes: "This is a 'best efforts' deal as found in the definition of 'reasonable commercial efforts'. There

## *5.2 Studies on Long-term Development and Natural Gas*

In preparing this brief, I tried to find any recent or systematic studies by the Federal or GNWT or other territorial bodies concerned with long-term development about possible value-added uses for the natural gas. There was virtually nothing, at least not in a publicly available form. I say "virtually" because there has been some limited discussion and study about the local use of natural gas for residential (heating and cooking) and electrical generation purposes. These are primarily around Norman Wells and Inuvik, in part through the NWT Power Corporation and the NWT Public Utilities Board. Also, there was a glimmer of some possibilities raised by the Mackenzie Valley Gas Conversion Feasibility Study (CH Four Consulting 2006). The GNWT should be commended for initiating the study. However, the government does not seem to have pressed on to the next stage, a further examination not only of gas conversion but other locally and regionally based development using the gas. This is a large and important question that goes well beyond the limits of this brief, but a few points can be noted.

## *5.3 Local Use of Natural Gas*

Conversion to natural gas and electricity for residential, commercial and industrial use is key to reducing external reliance on diesel and net reductions in locally generated greenhouse gas emissions. It is also key to strengthening the role of local utilities and, in some cases, municipal or territorial ownership and control of heating and related prices. This can be an important economic development lever not only in providing some measure of protection against exorbitant or impoverishing fuel price increases, but also an incentive to local and regional development. Lower energy costs have been a crucial factor in industrial diversification in the history of Ontario, Québec, Alberta, and British Columbia as well as a factor affecting living standards. The GNWT recognizes in its publications that "Energy costs are a major contributor to the high cost of living in the North and can hinder prospects for local economic development" (GNWT 2007), yet has apparently failed to seize the opportunity provided by the MGP to address the issue.

Today it is sometimes argued that pricing natural gas and energy at a higher level will automatically create incentives for people to consume less and be more efficient, propelling us into a green economy. However, prices today for natural gas and most minerals are much above average cost of production and exporters are flush with resource rents. Prices have more to do with ownership patterns of supplies, international instability and war, and government policies about taxes and resource rents. Further, there are more direct, predictable and equitable ways for a highly dependent regional economy to encourage conservation than to rely exclusively or simply on escalating energy prices that follow the swings of US and world markets. These include improved emission, heating efficiency and building code regulations, town planning, pricing formulas, cooperative heating and co-generation. If the North wants any industrial diversification, preferably of a low-impact variety, then its municipal, regional and territorial authorities must be free to use their resources as a lever for development as well as to protect their citizens from at least some of the economic forces outside their control.

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are no teeth since the Agreement 'does not mean or imply that a Party commits that it will actually accomplish the applicable objective' (s.1.2.9)... There are no sanctions, penalties or fines if the proponents do not meet any of the targets for employment, training, procurement or other commitments... It is unclear how the proponents' commitments will apply to contractors or subcontractors who will carry out much of the work on the MPG." I would add that the mediation-arbitration provisions are voluntary and, even if agreed by the Parties, could drag on at length and with little consequence. The arbitrator is barred explicitly and in depth from awarding "special, exemplary or punitive damages of any kind"(13.6.3 and 13.6.4). Problems in the enforceability of the SEA are also discussed by Bankes (2007).

One limit of the Gas Conversion study was its 20-year time frame. It also made other conservative assumptions. Most glaring is the treatment of every pipeline as an independent profit centre, leading it to recommend conversion for only three communities (Tulita, Fort Good Hope and Fort Simpson). From a longer-term development perspective, it could be argued that, while they may not initially be profitable, gas pipelines and transmission lines are necessary infrastructure. They need to be provided, at least for a defined period, as a public service, such as highways, or treated as a candidate for cross-subsidization with profitable lines. This practice has been used in Canada to help fund the early expansion of telephone lines and power lines to areas with limited populations. Such a practice would allow conversion for more NWT communities.

## *5.4 Obstacles to Diversification and Possibilities*

Diversification rarely happens in hinterland conditions based on market forces alone, particularly with a relatively small labour force and local market. Left to market forces alone, most hinterland areas do not see any substantial shift towards diversification, apart perhaps from public-sector related activity. Generally, laissez-faire development leads to negative effects on both resource-dependent communities and living standards in hinterland areas. As I will suggest, in the absence of some public sector leadership, pressures of globalization make successful diversification even less likely.

There are numerous other value-added industrial possibilities that need thorough exploration before approving any major commitments to gas export from the NWT. The Gas Conversion study rightly made suggestions to study applications of fuel cell technology, and gas liquefaction. To this could be added the expansion of co-generation facilities and the production and distribution of propane. There is also the possibility of natural-gas fuelled vehicle transportation, perhaps piloted with government and utility vehicle fleets. Study might include production of commonly used road and building materials such as asphalt that are currently imported. Co-generation has a limited start and could be expanded. On a larger scale, without necessarily endorsing the concept, I would suggest, given study of liquefaction, there could also be consideration of the idea of a port facility in the Delta region for this or other exports (instead of a Mackenzie pipeline).

I am not arguing here for any particular value-added use of the natural gas, but for a serious and systematic examination of a range of value-added activities using the resource as a direct input or as a utility service. During this process, which I hope would involve substantial public participation as well as expert study, I am confident that numerous and creative proposals would be generated, evaluated and possibly tested, through public, private, cooperative, or joint venture means.

For any degree of autonomously driven economic development, the NWT needs a research capacity that is independent of industry and at arms-length from any level of government. To my knowledge the NWT does not have a single independent research institute or group of high-level specialists (such as environmental scientists, engineers, economists) working on the natural gas resource and its possible use. Given the historic stakes in the future of the people and environment of the NWT, it seems to me that such a capacity is needed–and soon. In other contexts there has been discussion that the North needs a university. I would certainly agree. There is a great need for an independent degree-granting university based in the North, not only for teaching at all levels but also for providing a stable base for independent research and independent research institutions. Compared to the proposed $7.7 billion of investment (original MGP estimate) or the many times that in revenues,

establishing a research capacity, even a small independent university, would seem to be a rather small investment.[8]

Neither the MGP proposal nor any other provision or supplementary study foresees any substantial regional or local use of the natural gas. There is no recognition of any principle of local or territorial access to the gas at cost. One of the more disturbing elements in the Socio-Economic Agreement is contained in section 6.3 on residential and industrial access to gas, which says: "The Operator of the Mackenzie Valley Pipeline will assist in providing access to gas to 'NWT Small Market Consumers'..." Small Market Consumers are limited by a cap of only 100,000 GJ per calendar year.[9] Such low caps could block major secondary industrial development using natural gas. The proposed interconnection and metering is not only subject to the agreement of the pipeline corporation but constructed, owned, and controlled by it. In the event of uncertainty or dispute it is predictable who will prevail. Such terms, which in principle last for the life of the pipeline and the exhaustion of the resource, are yet another indication of how the needs and rights to value-added economic activities and future development in the North are being ignored, and even forgotten, in the proposal.

Direct export of natural gas without clear consideration of current and future value-added economic activities would have a major, cumulative and adverse economic impact on the NWT. The project fails egregiously on this count, though it is not entirely the responsibility of the proponents. **If the North desires to diversify, to be more than a hewer of wood and drawer of gas, then systematic attention must be given to local and regional use of the resource, and to strategies to develop value-added forms of secondary industry and research in the North. Further, until such time as the preparation and study is completed, a major quantity of gas reserves in the NWT need to be reserved and territorial control over pricing assured.**

# 6.0 ENERGY POLICY

For most countries and regions, how energy is used and developed is crucial to economic development and living standards as well as to the environment. This is especially so in hinterland areas, which often have longer internal distances, lower scale economies, and higher costs to external markets. Yet the impact of the proposed MGP on the development of an autonomous territorial energy policy is profoundly negative.

## *6.1 High Energy Costs*

Again, high energy costs are central to territorial concerns about energy policy: "The high cost of energy in our communities and its negative impact on economic development and our standard of living" (GNWT 2003). High energy costs also mean costly subsidies that weaken government budgets and capacities. In 2005, spending on NWT home heating fuel, electricity, and water was 93 percent higher than the Canadian average; average annual household spending on these was $4,700, which was a major increase from $3,600 in 2003 (GNWT 2007).

[8] By way of comparison, one of the most highly rated small universities in Canada, Acadia University in the small town of Wolfville, Nova Scotia (population 3,700), has an operating budget reaching about $50 million annually with about 210 full-time and 40 part-time faculty and 3,700 mainly undergraduate students. Of course, an independent Northern university could start and perhaps continue to be smaller than this with research and teaching programs suitable for the North, such as the environmental sciences, nursing, northern agronomy, Northern languages and culture, and education.

[9] As a perspective, Inuvik (population about 3,300) required 260,000 GJ for electrical generation and 312,000 GJ for heating in 2005-06 (inquiry with the GNWT). Natural Resources Canada reports it takes 100 to 200 GJ of gas to heat a home in the NWT for one year.

Despite an abundance of natural gas and other sources of energy in the NWT, natural gas is used only in Norman Wells and Inuvik, and at prices much higher than, for example, in Alberta: Alberta is $8 /GJ versus $14.25/GJ in Norman Wells and $20.51/GJ in Inuvik (GNWT 2007). In Norman Wells, gas reserves are nearing depletion (the produced resource is about 137 billion cubic feet of the estimated resource of 138 billion cubic feet). For the NWT as a whole, electricity generation is about 20 percent from natural gas, while it is about 40 percent from hydro and 40 percent from diesel.

## *6.2 Energy Balance*

The following Table 3 outlines the energy balance for the NWT.

**Table 3. Energy balance of the NWT, 2005**

| **Production** | | **Consumption** | |
|---|---|---|---|
| **Non-Renewables** | **(GJ)** | **Non-Renewables** | **(GJ)** |
| **Natural gas** | | | |
| Ikhil | 422,391 | Gasoline | 1,661,832 |
| Norman Wells | 972,856 | Diesel | 14,255,399 |
| Paramount–Fort Liard | 2,387,920 | Propane | 354,104 |
| Chevron–Fort Liard | 3,709,804 | Natural gas | 1,915,162 |
| Cameron Hills | 2,378,216 | | |
| (subtotal Natural gas) | (9,871,187) | | |
| **Oil** | | | |
| NWT | 45,203,038 | | |
| Total non-renewable energy production | 55,074,225 | Total non-renewable energy consumption | 18,186,496 |
| Renewables | (GJ) | Renewables | (GJ) |
| Wood and wood pellets | 686,000 | Wood and wood pellets | 686,000 |
| Hydro | 928,571 | Hydro | 928,571 |
| Total renewable energy production | 1,614,571 | Total renewable energy consumption | 1,614,571 |

Source: Inquiry with GNWT. The estimate converts production volumes of natural gas to gigajoules at 37.16 GJ /1000 m3 and oil at 38.51 GJ/$m^3$

Overall, the NWT has an energy balance that relies heavily on imported sources, especially diesel (about 78 percent of gigajoules consumed). Natural gas, which is from local sources, is only about 11 percent (by GJ). On the other hand, it exports a great deal more than its total energy consumption, of both oil and natural gas. Given the long known and enormous abundance of oil, natural gas and hydro power in the NWT and evident concerns about the high cost of energy, it seems a worthwhile question to ask why energy in the NWT is so expensive and import dependent. The typical reasons given are unique Northern circumstances, particularly vast distances, extreme conditions, a lack of infrastructure, and low population densities. These factors no doubt play some role, but I think they miss out on some other factors--energy policy (or lack thereof), regulatory philosophy and corporate monopoly--in affecting price and availability outcomes.

## *6.3 Impact of Energy Policy*

In the case of Norman Wells, the town owns the distribution system, and buys natural gas from Imperial Oil, which has a monopoly. In the case of Inuvik, Inuvik Gas Ltd. not only has

a monopoly on the natural gas supply but holds the distribution franchise. Inuvik Gas, based in Calgary, is jointly owned by Alta Gas Utility, Enbridge Consumers Gas, and the Inuvialuit Petroleum Corporation. Though subject to the NWT Public Utilities Act, the Public Utilities Board takes a "light handed regulatory approach" to the two monopolies, on the stated grounds that there was competition from alternative fuels, particularly diesel and heating oil. On October 6, 2006, the Town of Inuvik objected to a proposed 15.9 percent rate increase, raising the points that the rate hike was unrelated to increased operating or capital costs and that "a 16 percent increase entering the winter season will inflict financial hardships on community residents, businesses and governments programs." In 2003, the Town had to make a complaint against a proposed 45 percent increase. The price at Norman Wells, which influences the approach for Inuvik, is driven significantly by the Alberta Reference Price, which in turn is a North American market price. In microcosm, there is a struggle here over resource rents. These small communities are paying gas prices that are being pressed upwards and beyond world levels by corporate monopoly suppliers in which the territorial abundance of this resource is of limited benefit to consumers.

With current ownership structures, regulatory philosophy, and a territorial acceptance of world or North America reference pricing, there is very little likelihood that household or business consumers will see any major changes in these fuel-cost situations with the MGP. Approval of the MGP simply by connecting Northern gas into the southern market system will reinforce the already existing pressures in the NWT for higher North American and world prices. To protect territorial priorities and assure a gas supply at territorially controlled prices would mean reserving some or all gas for exclusive territorial use and under territorial regulation, such as through the Public Utilities Board.

There is also the additional danger that, with a pipeline linking NWT natural gas into "southern markets" (a term used to include US markets), NWT production and reserves will become subject to NAFTA provisions on energy. The US Canada Free Trade Agreement (FTA) had greater control over Canadian energy as one of its goals, particularly to stop any national self-sufficiency or publicly led energy policies (such the National Energy Policy, though Canada is not the only country where the US has perceived this as a threat). A key provision was eliminating any "price discrimination" between Canadian and US consumers, as part of creating a continental energy market. This restriction to Canadian sovereignty was continued in NAFTA energy provisions. It is important to note a major socio-economic impact that could follow from NAFTA: the moment the NWT connects its Beaufort or other more remote reserves to Alberta, NWT production and reserves become part of the integrated North American market and all that this implies, including the provisions of NAFTA. Under the NAFTA "proportionality" requirement, in particular: "Although Canada can act unilaterally to restrict its own internal consumption, it cannot reduce exports to the US beyond the same proportion of its internal cuts, calculated on the basis of exports for a recent three-year period, even in times of domestic shortages. Under this proportionality arrangement, the export price cannot be set higher than the domestic price" (Mitchell 1995: 117).

## *6.4 Improving the NWT's Energy Balance*

In the energy balance of the NWT, hydro power plays an important role though much less than it could. The expansion of natural gas as a local energy source could be balanced with the expansion of hydro power as well as newer technologies, with the goal of reducing external dependence and achieving the overall lowest cost and least environmental impact. For some regions and some purposes, gas may be a better choice to hydro or alternatives, while for other regions and purposes, hydro may be a better choice. For some regions and purposes, both may be needed, which might also provide a certain amount of extra capacity

for security or act as a protection against monopoly concerns. Eliminating the possibility of lower priced natural gas, a likely consequence of the proposed Project, will also mean less pressure to control or lower the price of hydro power. Higher pricing of local energies in turn would make substitution out of diesel a slower and more costly process.

There is evidence that the GNWT has not had adequate opportunity to consider seriously various options that are both economically and environmentally of considerable importance. For instance, the Energy for the Future document notes that 55 percent of the 415 million litres of fuel consumed in the NWT are used for transportation, but suggests flatly that there is little potential for reducing the use of transportation fuel. Indeed, it is stated that "The development of highway infrastructure would likely have the greatest impact in terms of reducing energy costs, and the overall cost of living in many NWT communities." Yet, the economics and planning evidence is that road and highway improvements could also increase vehicle use substantially. This may be desired by the GNWT (perhaps as a trade-off with air travel, though this is not the only cost or modal trade-off needing to be considered), but in itself this does not necessarily bode well for reducing non-renewable energy use, energy costs, or the full cost of transportation in the NWT. The issue deserves much deeper discussion and planning, including the role of natural gas and other technologies.

In short, the proposed MGP would run contrary to stated territorial concerns about high energy costs and the negative budgetary effects of the subsidies they require. The project will reinforce higher prices and restrict the capacity of local and territorial governments, perhaps even the Federal Government, to address this issue fundamental to the future economic development of the NWT.

# 7.0 INADEQUACY OF THE AMOUNT AND TERMS OF RESOURCE RENTS TO THE NWT

Resource mega-projects today almost invariably involve conflicts about the amount and distribution of resource revenues or resource rents,[10] especially when resource prices are high. In evaluating overall sustainability and benefits of the proposed project one is now faced with two scenarios, one under the proponents' 2004 projected costs of $7.7 billion and, the other, the recent May 2007 updated projected costs (in 2006 dollars) of $16.2 billion. In my view, neither of these scenarios provide an adequate basis for going ahead with the project.

As argued here, the proposed project has very limited employment, secondary industry or energy benefits to the NWT and potentially great foregone opportunities. The key element that seems to justify the project is anticipated resource revenues. I will address first the original 2004 proposal, which overall had somewhat more favourable results than the updated proposal.

## *7.1 Original 2004 Proposal*

As originally projected, the projected resource revenues from the MGP are still inadequate in their amount and terms. They are inadequate to the Federal Government and ill-defined to

[10] By resource rents I mean that part of pre-tax corporate profits (or net revenue) over and above an average rate of profit in the economy. Resource rents can be paid out or distributed in a variety of ways, typically in corporate profits, royalties, and taxes, as well as in lavish executive salaries and compensation tied to profits and, at times, inflated wages. Though important for public policy, resource rents are often difficult to calculate precisely because the cost information needed to do so is typically proprietary and the average rate of profit calculation can be contentious, such as when subjective adjustments for risk are introduced.

the NWT relative to the very high amounts to go to the corporate proponents. No agreements yet state explicitly the right of the people of the NWT to share in the resource rents or offer legal recourse if the Federal Government makes agreements or changes to agreements contrary to the interest of the NWT. Given its subordinate political position and without a primary claim on the economic rents from the proposed Project, this should be a major concern now and for the future. Unlike a province, the NWT could be more easily subjected to pressures, for instance, to reduce its revenue share such as in the event of federal fiscal problems or recession. The lack of definition and predictability in resource revenues also makes it more difficult for the GNWT to establish an autonomous long-term economic development policy. Further, there is need for a clearer commitment to and definition of both mitigation and heritage-type funds, particularly for assisting affected communities and long-term development objectives.

To begin, as is well known, the major profits and economic rents of the Project are not in the pipeline operations but in the gas extraction and ownership. On fairly conservative assumptions, the Pacific Analytics (2006) financial modelling found there would be after-tax internal rates of return (IRR) generally around 9.6 percent for the Mackenzie Valley Pipeline and the Gathering System. This result was relatively stable under different assumptions, based on after-tax cash flow to owners of at least $8.0 billion or higher depending on the assumptions. For the gas field extraction operations, the modelling results are more sensitive to assumptions. However, for the base case of anchor-field extraction alone, Pacific Analytics finds the after income-tax internal rate of return to be 32.0 percent (before income tax, 38.9 percent).[11] The payback period could be fewer than five years. As the analysis observes: "These are relatively high IRRs, particularly since Anchor Field production is moderately low risk....Risk-free returns are roughly equal to the long-term bond rate (before income tax rate of 4.5 percent). Low risk returns (for, say, regulated natural gas pipelines) are in the range of 10 percent-12 percent. The Alaska Gas Pipeline has assumed a pre-income tax IRR of 17.8 percent..."

Further, Pacific Analytics finds that for the Federal Government total tax revenues would reach $18.3 billion over a 27-year life of the anchor fields ($3.6 billion from the pipeline and gathering system plus $14.7 billion from the anchor fields). Of the $18.3 billion, $14.4 billion--79 percent--would go to the Federal Government and $3.9 billion--21 percent--would go to both the Alberta and NWT governments. In real 2003 dollars, this would be $256 million per year and $72 million per year, respectively. That is, unless the Federal Government guarantees a share of its royalties and taxes to the NWT, the GNWT could be assured of no more than a mere portion of $72 million per year directly from the resource rents.

Clearly, the vast bulk of resource rents are flowing to the Federal Government and the oil companies. For the Federal Government, $14.7 billion of its $18.3 billion tax revenues would come from the anchor fields. For the oil companies, too, after-tax cash flow is magnitudes higher for the gas field operations than for the pipelines, for the anchor fields alone about $14.6 billion over the 27 years. Although internal rates of return decline somewhat under different modelling scenarios, the after-tax cash flow (or mass as opposed to rate of profits, including rents) is much higher, and Federal tax revenues also escalate.

## *7.2 Updated 2007 Proposal*

The updated proposal will likely have even lower resource revenue benefits. The updated financial analysis by Pacific Analytics (2007) shows that the main financial impacts of the

[11] This is based on after-tax cash flows of $14.6 billion for the three anchor fields over 27 years.

doubling of projected capital costs is felt not in the returns to the Pipeline and Gathering System but in the returns to the Anchor and other fields, which would have to pay higher tolls. In terms of the Pipeline and Gathering System, income taxes for the federal government, Alberta and NWT would rise from $2.2 billion to $6.7 billion (in 2006 dollars, Table1). However, gas field returns would fall sharply, especially in royalties. For the Anchor Fields alone, royalties over the 27-year period are estimated to fall from $7.3 billion to $3.3 billion and income taxes to fall from $6.3 billion to $4.0 billion, a decline in revenues of $6.3 billion that would overwhelm the increase in the Pipeline and Gathering System. Even if one includes other gas fields offshore, there is still an estimated overall decline in revenues (from $46.1 billion to $43.6 billion), largely through a major fall in royalties.

Questions can and should be raised about the proponents' projected doubling of capital cost estimates. Such an increased magnitude of costs reinforces in itself serious questions about the basic conception of the project and, at very least, suggests a delay until input costs are more reasonable. Whether at this level of cost or lower, any public subsidy of the project would only reduce further the net resource revenue benefits.

It deserves note that delay might also allow for a serious review of the Federal royalty and tax regime. The Federal royalty and tax regime, on which the NWT is currently dependent, is below the standard of some other jurisdictions, such as Norway, which will reduce possible benefits to the NWT. The Pacific Analytics study found, for the original Anchor-Fields-only case over the 25 years, that the Norwegian royalty/tax system would collect $14.2 billion compared to $7.5 billion under the current Canadian system--88.6 percent higher resource revenue or a possible loss of $6.7 billion (over a quarter billion dollars per year). The internal rate of return would still be remarkably high--27.3 percent compared to 32.0 percent. With extraction in more fields and over 45 years the possible losses under the current Canadian royalty/tax system would be even greater. The Norwegian system would collect $65.8 billion, $23.7 billion more than the Canadian system. The internal rate of return would drop only from 27.5 percent to 25.2 percent.

The weakness of the Canadian royalty system relative to others was confirmed in a study done for Indian and Northern Affairs Canada. Strategic Value Services (2006) compared the Federal fiscal regime with those in Alberta, BC, Alaska, and Norway. It found that in the approximate range of 60 to 80 percent fiscal capture, the Canadian Federal was at the lower end. "We found that the Frontier Lands [Federal] regime was most favourable to industry of the regimes considered" (SVS 2005: ES-4). Actually, the study's numbers show that the Canadian level was much below the 60 percent low end in some cases. Although the study comments that the greater rent taken may be necessary to attract industry, there is no evidence that this is the case, and much that is contrary, not least the comparisons with Alaska.

In any case, the economic rent is usually understood to be what can be taxed by the landowner (in this case the Federal Government) to obtain a market rate of return. The rates projected for the oil corporations are far above market. The Federal fiscal regime should not be dissipating the value of publicly owned resources or subsidizing corporate exploitation of the resource. If the consortium is unwilling to pay a higher public standard of taxes and royalties for the natural gas, then other avenues of development or other proponents should be considered, or economic conditions should be allowed to mature until proponents are willing to pay the appropriate levels of rent.

These estimates illustrate how paltry would be the amounts derived from resource rents assured to the NWT, relative to those of the oil corporations or of the Federal Government, as well as how weak the Federal royalty and tax system is relative to similar jurisdictions.

The GNWT does not have constitutional authority in this process, although there have been discussions taking place for some time between the Federal and Territorial governments on "devolution" (of federal powers to the NWT). I suggest there would be a negative economic impact on the NWT to go ahead with a project of the magnitude of the MGP without a clear framework for rights to resource rents or revenue sharing. Perhaps it cannot be argued that the NWT must have the equivalent of full ownership of Federal lands before any future resource project is approved, but the governments and people within the NWT do need and deserve to have a substantial and defined share of resource rents and authority in determining the royalty system, as well as a guarantee that resource rents transferred would not be clawed back in reduced Territorial Formula Financing. Further, as is the right of provinces, the GNWT and Aboriginal governments should have the right to refuse any proposed resource project that extracts from or transports within their jurisdiction.

The importance of such an agreement is only partly that funds made available through it can be used to mitigate socio-economic impacts of resource development. After all, it is reasonable to argue that the social and economic costs associated with private resource development should not be paid socially at all, but rather by the corporate proponents of such development. More important is funding to initiate and support education, infrastructure, research, and alternative industry to reduce primary dependence on resource-for-export development.

The Federal Government announced in July 2005 it had a framework agreement for the creation of a $500 million MGP Socio-Economic Fund. The subsequent *Mackenzie Gas Project Impacts Act* provides that Federal funds will be granted for over ten years to "regional organizations" on a project-basis if their proposal "mitigates the existing or anticipated socio-economic impacts on communities in the NWT arising from the Mackenzie Gas Project" and "is consistent with criteria established and made publicly available by the Corporation."

This Federal proposal raises certain issues that deserve to be addressed in terms of dealing with impacts. To begin, the timing of the fund must not prejudice the decisions or recommendations of the Review Panel. As recently as this February, Mr. Matthew Spence (the INAC official responsible for the Impact Fund) perhaps tried to anticipate such a concern when commenting that, in terms of the recommendation from the Joint Review Panel, "it is expected the regional organizations will be required to incorporate applicable recommendations in their regional plans..." This said, Mr. Spence closed by stating "the provision of the fund is conditional on the MGP proceeding."

The creation of the fund raises more sharply the issue of what constitutes "socio-economic impacts" and their actual costs. These are potentially many and varied. A typical impact is the loss of jobs following the construction or start-up phase and the attendant problems of higher unemployment and poverty. Sometimes, there are bottleneck problems, for example, labour shortages and housing shortages or exorbitant housing costs during the construction or start-up phase, which are reversed after the boom, often quite brutally, with high unemployment, house losses, bankruptcies and aggravated social problems. Increased populations in some areas can cause decreases in others, with attendant effects, for example, on school populations, local tax revenues, and business activity. Because many hinterland areas have pre-existing and chronic unemployment, poverty and limited employment opportunities, it is often easier to deal with start-up impacts than the subsequent decline. The seriousness and complexity of such impacts and conditions as well as government policy weaknesses are reflected in the multitude of organizations and occupations, temporary and long-term, that can and have done work related to socio-

economic impacts.[12] In dealing with this complexity, experience suggests three problems tend to recur.

First, even when the anticipated impacts and their costs are well-defined, the corporate developers will resist paying for them. In the present system, corporations have little or no legal or financial responsibility for the human costs or impacts outside their own operations resulting from start-ups, employment or spending fluctuations, or layoffs. These "adjustments costs" are largely externalized to workers, communities, and government social programs. For this reason, governments and the public in affected areas have an interest in minimizing these costs in advance, for example, by organizing construction employment to be more continuous and to fluctuate less.

Second, socio-economic impacts are sometimes difficult to define or to foresee. In particular, there is often confusion or debate about what are project impacts and what are pre-existing conditions. Some delineation of the two is needed. In part this can be done by recording baseline, pre-project or pre-impact conditions (such as employment and unemployment rates, tax, price, and other economic data, health and social indicators, and so on), then noting all changes. This is crucial for determining responsibility but also in evaluating the effectiveness of programs for mitigating adverse impacts. Adverse impacts can be falling short of an expected improvement or an absolute deterioration from an existing norm. While the present system tends to limit corporate responsibility for negative socio-economic impacts of either type, regulatory authorities and governments could still develop an explicit list of minimum social targets and norms (such as in training, education, housing, health services, and community order) and the costs and responsibilities for remediation. Neither in the MGP proposal nor the terms of the Socio-Economic Fund is there any clear list or range of possible impacts and responsibilities for adverse socio-economic impacts.

Third, adjustment costs can be enormous, much larger than is generally supposed. For example, retraining programs are often only short-term or cover only tuition and materials, but the full education costs, especially in longer programs, including student income, transportation costs, and day care or support for family dependents, can be substantial. For this reason, as well as the reality that they exist in a political context affected by concerns of administrative self-interest and political pressures, adjustment-type programs have not always had adequate funding, transparency, or results from the point of view of those most affected (for instance, Leadbeater and Suschnigg 1997).

In this context, for the proposed Project there should be two separate public funds, one an impact fund and the other a development (or heritage) fund, both financed directly through resource rents. One fund might have a base amount per worker but also an assessment of probable mitigation or remediation costs specific to particular impacts and specific communities or areas. Such an impact and closure fund, such as a strengthened form of Manitoba's Mining Reserve Fund, should be established for every resource project and directed to the specific geographical areas and specific impacts. Because it would be defined as tied specifically to the project (local housing, infrastructure, social services,

[12] Hinterland areas have experience with, for example: HRSDC employment centre services, Adjustment Committees following major layoffs, including professional assessment and guidance services, community job search and training centres, union information and legal services, women's shelter services, School Board and College guidance, credit, and non-credit education programs, Public Health, police, or municipal recreation departments, Community Futures programs, community investment funds, and co-ops, individual practicing professionals from medical doctors and nurses, to psychologists and social workers, to alcohol and drug abuse counsellors, to lawyers, accountants, and bankruptcy and credit counsellors, the United Way and charitable organizations, the Red Cross, local religious organizations and service clubs. The list could go on.

environmental monitoring, policing, for example), there could be more careful monitoring and evaluation of the spending and its adequacy in addressing specific impacts. The fund could be exhausted as its work is completed. The experience accumulated could be analyzed and carried into other projects and their terms. The second fund, such as the Alberta or Northern Ontario heritage funds, would be for general economic development purposes throughout the NWT and not necessarily tied to the immediate geography or issues of the impact. The fund would be permanent and set up to ensure its capital and activities would be perpetuated for future generations. The fund's terms would be strict and transparent to prevent it from becoming a political pork barrel. A major issue in the NWT, as elsewhere, is the greater regional unevenness and social inequality following from resource mega-projects. Such funding would put a greater focus on these broader issues as well as help support strategic measures to shift development away from the current massive economic dependence on the extraction of non-renewable natural resources.

**In short, the MGP has such potentially massive economic and social impacts that it should not go forward without a long-term agreement regarding a substantial and defined share of resource rents.** These rents are needed not only for mitigation of socio-economic impacts but also for diversification and alternatives to resource- export-dependent development. The magnitude of the federally sponsored Impact Fund, perhaps the largest in Canadian history, suggests how massive the negative impacts could be. **Any conditions should incorporate not only a project impact fund but a heritage-type fund for more general economic and social development purposes, particularly for reducing dependency on primary resource export and addressing long-standing regional and social inequities in the NWT.**

If the project were to go ahead without such obligations, it is unlikely that any future resource-sharing agreement would retroactively incorporate Mackenzie Gas into its terms. Though its legal status raises questions, the "letter of comfort" issued in 2005 by the Federal Government indicates that any resource-rent sharing agreement would likely exclude what might be the NWT's single most valuable potential resource project.[13]

# 8.0 RAPID CHANGE AND RISKIER CONDITIONS – FOR THE PEOPLE OF THE NWT

Much has been suggested about the financial risk of the Project to its proponents. Yet it is only one among their numerous investments in various parts of the world and, as noted earlier, its most profitable element, Anchor Field production, is only "moderately low risk." But theirs' is not the only risk. Far greater is the risk and potential opportunity cost to the people of the NWT, who would have to live for many generations with its consequences. For them, the terms and scale of the proposal make its socio-economic and environmental impacts a serious and unnecessary risk. Indeed, changes in regional and world conditions are adding to this risk, particularly as environmental and socio-economic challenges have become increasingly intertwined.

At present, the public socio-economic case for the proposed Project rests largely on the expectation of positive outcomes through future resource revenues. Other benefits are weak and contradicted by potentially serious social and economic costs. In particular, long-term, direct employment and procurement impacts are relatively small and not guaranteed. For

[13] In a letter to Imperial Oil Ltd, dated November 16, 2005, the then Deputy Prime Minister Anne McLellan stated on behalf of the Federal Government that "We will make best efforts to ensure that any devolution of self-government agreements in the NWT honour any commitments the Government of Canada make with respect to the MGP."

the short-term construction phase, there is at least as much public concern about major negative socio-economic impacts and their mitigation as there is about benefits. Indeed, the Federal Government foresees that at least $500 million of public funds is needed to mitigate impacts and win support in affected communities, which in itself suggests a considerable level of negative impacts. As for environmental impacts, even if one assumes that all local impacts are resolvable, there are still major concerns about its effects in increasing greenhouse gases and climate change. In particular, there are growing concerns about the end-use of the gas (undefined, but potentially for upgrading heavy oil in the Athabasca tar sands) and the lack of an environmental principle relating to end-use, such as carbon neutrality. The larger-scale environmental impact of the proposal is especially important for the North, where the damaging effects of climate change are advancing more rapidly. Then there are serious issues of the negative effects on diversification and energy.

For the NWT, this does not make a strong case, and changing conditions domestically and internationally are making it weaker still. On the issue of resource rents, this brief has pointed to the low Federal Government share, including relative to other royalty and tax regimes, and with it the low and undefined levels of resource revenues expected by the NWT. The updated cost projections weaken this further. The comparison studies of royalty and tax regimes made so far are quite limited, being confined to northern North America and Norway and for a single time, though times are changing. Throughout much of the rest of the world, there is a growing trend towards a higher level of public collection of resource revenues. About 77 percent of the world's hydrocarbon supplies are controlled by national petroleum companies, in the public sector (Séréni 2007).[14] This shift is actually increasing the bargaining power of the Canadian government as well as the NWT, especially alongside the general trend of reduced availability of supplies. Time is on the side of the NWT, if its reserves are not sold off in the short term for rapid extraction.

This brief has suggested there is a substantial and growing body of evidence critical of the socio-economic and environmental consequences of resource-export-dependent development. In terms of the environment, there has been significant progress made in understanding, limiting, and remediating many local or micro-level environmental impacts of resource development. However, there is still a long way to go for large-scale industry- and economy-wide impacts, notably regarding climate change. Tragically, the petroleum industry has a history of unreconstructed self-interest in continued expansion of natural gas and oil export and consumption. For instance, the proponent Exxon Mobil has tried to subvert mainstream science on global warming and those who would challenge rapid non-renewable resource extraction and export.[15] This outlook for pro-export expansion has been promoted to governments and local elites who become dependent on hydrocarbon exports and resource rents–which itself tends to perpetuate policies favouring resource-export dependency. One deserves to be sceptical about the sudden conversion of ExxonMobil's CEO to the cause of climate change. We have yet to see any sign of such a conversion in the terms of the proposed MGP.

Compared to environmental impacts, less progress has been made in dealing with the socio-economic impacts of resource-export led development. Indeed, the context of globalization has made it even less likely today that a classic externally-owned, capital-intensive, resource-export mega-project of the MGP type will lead to economic development or substantially alter negative socio-economic impacts, including those related to the mixed

[14] This includes the OPEC countries, Brazil, China, India, and Norway and shift to public sector ownership and control is increasing elsewhere, in such high profile actions as Bolivia's decision to nationalize its natural gas, Venezuela's renegotiations with private oil corporations, and Russia's actions to take back control of the Gazprom monopoly (see also Juhasz 2007).

[15] See, for example, Union of Concerned Scientists (2007).

economy. This is because the current period of globalised corporate concentration and internationalized competition coupled with labour-reducing productivity growth has actually led to diminished employment prospects, long-term economic stagnation, decline in living standards and increasing inequality--and reduced the bargaining power of working people and communities in resource-dependent hinterland areas. Hinterland regions in Canada in the present period are economically weaker and politically more vulnerable. This situation, emerging since the 1970s, has created a "new crisis of economic development" in hinterland Canada (for example, Leadbeater 1997).

Given that it appears to rest largely on the expectation of increased resource revenues, the case for the Project would be stronger if there were a substantial improvement in the amount and assuredness of resource revenues to the NWT. However, the form of the resource development is also crucial, especially in its pace, its labour force development, its commitments to secondary industry and research, and its effects on energy policy. I argue that an alternative development strategy is required and needs to be reflected in the terms and conditions of resource-development proposals, especially those of the pace and scale of the MGP. Without a clear development strategy that shifts development away from resource-export-dependence, resource revenues are likely to be used in ways that reinforce the dependency and reproduce past patterns, on a larger scale. The expectation of future streams of resource rents itself is simply not sufficient as a framework to assure sustainable or equitable development. Any serious discussion of socio-economic impacts needs to address this fundamental concern, which is not new. The Berger Report itself (1977) suggested such a point in the context of Aboriginal land claims and economic development.[16]

A recent study of the environmental impact of the MGP over its lifetime has shown that it could double greenhouse gas emissions in the NWT–over the currently growing level of greenhouse gas emissions (Moorhouse et al. 2006). Another study suggests that the value of the Mackenzie Valley left undeveloped is as much as 2.5 times greater than all forms of resource extraction combined.[17] Both of these studies, each in their own way, raise legitimate and serious concerns about impacts that could stem from the scale and irreversible transformation the proposed Project would likely bring. They reflect too the historical turning point we have reached in Canada regarding not only local-level environmental and social impacts but also larger regional and pan-Canadian impacts. While one might question certain elements of the studies, I think they raise again, and sharply, the importance of considering the opportunity cost of the MGP not only to present but future generations--of foregone and qualitatively important alternatives. Many of the costs of lost alternatives could be difficult to measure, though they are real. For instance, by rapid

[16] The Mackenzie Valley Pipeline Inquiry Report (1977, Volume Two, 41) commented: "The various native claims proposals include provisions for the transfer of capital to native control, chiefly through royalties on non-renewable resource development. Evidence from Alaska suggests that this is not without problems: it can create rather reduce dependence on externally controlled rapid industrial development. Capital transfers will not, in themselves, assure the appropriate financing of renewable resource development unless specific provisions for that purpose are incorporated in native land claims settlements. Ultimately, renewable resource-based enterprises and, indeed, the sector as a whole may be able to generate their own capital requirements, but that is not possible now." Whether by accident or design, the now recognized Aboriginal lands in the Mackenzie Delta do not include the three Anchor Fields.

[17] According to the analysis of Anielski and Wilson (2007): "The market value of the Mackenzie watershed, assessed as the region's GDP, is estimated at $41.9 billion per year, an average of $245 per hectare. The non-market value of the watershed, assessed as the potential value of 17 ecosystem services produced by the region, is estimated at $448.3 billion per year, an average of $2,631 per hectare...The ecological goods and services provided by nature (e.g., carbon storage, water filtration, water supply) in the Mackenzie contribute over 10 times more societal economic value than the GDP generated by natural capital extraction industries. This evaluation is not intended to undervalue the resource potential, but rather to temper its value in a broader sustainability context."

exhaustion of the resource for export as proposed, there would be the gains foregone in employment, education, research, and technology as well as in spin-offs from value-added uses of the resource and the stimulation of local secondary industrial development.

In the analysis of economic development options, alternative industrial, training, and research paths have qualitative impacts (the types and distribution of employment, education and research, for instance) that are not captured simply by the narrow financial analyses of projected revenue streams. Just as small differences in rates of savings when compounded over an extended period can lead to major increases–or decreases–in amounts of savings at the end of the period, so also the loss of opportunities in industrial development, training and education, research and local ownership and control can have major consequences for local and regional development. The financial modelling of different development paths can be useful, but typically the results are strongly affected (and can be reversed by) even small alterations in assumptions about such conditions as expectations of future prices and costs, choice of the discount rate, government tax and resource policies and the treatment of social costs. Hence, to evaluate the development choices between a model of externally owned, rapid extraction for export versus a less rapid more regionally based path requires qualitative as well as quantitative markers along the path as well as careful consideration of long-term economic and social development objectives.

As the debate about the MGP evolves, the Government of Canada and the provincial and territorial governments still do not have a clear or substantial policy on greenhouse gas emissions and their relation to economic development policy, especially as it relates to less urbanized regions. Such a policy could be important in terms of defining limits to the type and rate of gas and oil production and end-uses, but also in finding more equitable ways among regions and groups of people to balance the economic burdens as well as benefits in acting against climate change. The issue is of such a magnitude that it warrants a policy discussion and agreement that is pan-Canadian and multi-governmental, including Aboriginal people. Carbon taxes, capping and trading and other measures affect consumption and production patterns, which have regional distributional impacts that need to be clarified and foreseen. Hence, I would argue that foregoing export production in certain export-dependent areas warrants adjustment to the Territorial Formula Financing or a new Canadian equalization formula.

There is a danger to the North in going ahead with massive gas development before establishing such a clear country-wide policy on climate change. The future is likely to see more critical events related to global warming and governments under pressure to adopt more stringent emission and production limits. Given its limited political clout, the NWT could rapidly find itself more restricted in export options or threatened by altered resource rent policy, and the structure of its incentives to exploration and extraction.

The question of long-term impacts and protecting future development options is especially important for the NWT. There is a long history of colonialism and the exploitation of hinterland area resources for the wealth and power of corporate and political elites of the metropolitan centres of Canada, Europe and the United States. Federal policies and studies still tend in this direction.[18] But there is also a history of challenge and research questioning

[18] For instance, the recent federally-established report of the Expert Panel on Equalization and Territorial Formula Financing (2006) deals with issues that are fundamental to the NWT's capacity to deal with Mackenzie Gas and its long-term consequences. Positively, the Panel saw certain needs of the NWT and proposed increases in formula financing. But the report fell into the same metropolitan pattern of thought about Northern development: "Although economic diversification is currently limited, there are significant opportunities for resource development." And again: "There is great potential for economic development from natural resources in the NWT; however, there are significant financial and social costs involved." The recommendations I think suffer

classic patterns of absentee-owned and controlled resource-export dependency. The presence of the Aboriginal Pipeline Group, particularly given its minority nature and terms, does not alter that pattern.

A major way in which conditions today have changed is that environmental and socio-economic impacts are increasingly intertwined. The crisis of global warming coupled with the narrowing horizon of resource-exhaustion is combining with the new economic conditions of globalization. We are in a transition period, one which suggests greater need for caution in evaluating high-impact proposals. A regulatory process faced by any proposal of such historic consequence will inevitably have to analyze and make recommendations on specific issues that bear on changing economic and social priorities. During such a period of socio-economic and environmental change, regulatory initiative and protections are even more important.[19] They also need to take into account a wide variety of possible critical socio-economic events. In their review of social impact assessment (SIA), Finsterbusch and Freudenburg (2002: 435) comment: "A major conclusion that we draw from our review of the SIA record is that the unexpected may be the rule rather than the exception, and that 'surprises' need to be factored into the planning process more realistically and effectively."

# 9.0 AN ALTERNATIVE VISION

There is an alternative development approach towards the natural gas resource than that which inevitably follows with the MGP. That alternative is based on:

i. a much slower rate of extraction. The government and local populations must be able to intervene to shape the pace and scale of resource extraction projects.
ii. priority mainly to local and regional Northern use of the resource.
iii. the environmental principles of using the gas to substitute for dirtier fuels–carbon neutrality--and for regional self-sufficiency in energy.
iv. tying gas extraction to the development of value-added secondary industry and research.
v. use of the gas as a means to reduce energy costs to the local population and to stimulate the development of more diversified industry and employment.
vi. a much stronger role for ownership and control in the NWT, including through local and territorial public utilities and research centres. This is crucial for the retaining of benefits in the North. There should be a minimum 50 percent public ownership and control, including a portion for the GNWT, and an explicit veto provision for the GNWT and Aboriginal people on whose land the Project occurs.
vii. if there is to be export of the natural gas, it should be clearly a subordinate priority to local use and with provisions for two-tier pricing so that local prices are not forced to rise to higher world levels.
viii. further, if there is to be export, other means of transportation, such as liquefaction and export through a Delta multi-use port, should be evaluated.
ix. finally, given the rapidly changing economic and environmental situation internationally and locally, and to protect future generations, there needs to be a five-year review process that allows for adjustments to be made to the terms of

from such a one-sided view of the potential of the North and, not unusually, appear to see the accommodation of "social costs" more as a means to facilitate primary resource development than as a matter of constitutional rights, addressing a legacy of colonial development, or simple equity.

[19] Consider an observation by Tertzakian (2006:216-217), who is not alone in raising the concept: "In 1979, the planning Director of ENI, Italy's state-owned oil company, was quoted as saying, 'Oil is a political commodity now. It is not something to be left to markets and businessmen.' The statement is true for every historical break point, and I suggest it's true for any break point in the entire history of energy. How nations respond to the coming break point will necessarily go beyond the forces of mere markets and businessmen"(2006: 216-217).

extraction, transport and export of the natural gas resource, particularly if environmental, employment, equity, procurement and resource rent benefits are not being realized in the NWT. The process could be carried out by a tripartite Federal, Territorial and Aboriginal body under terms embedded in the federal approval of the project.

Halting the proposed Project does not mean halting alternatives. Indeed, it could be a positive result in breaking the preoccupation with externally led development and opening the door to new and energizing priorities.

The above points are raised to emphasize that these Review Panel hearings are occurring in a period of major change. This context itself adds to the potential negative socio-economic consequences and risks of the proposal. There exist major policy questions concerning the environment and resource development that are far from resolved and which could have irreversible socio-economic impacts on the North. This is not an appropriate time to proceed with the proposed MGP.

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# Appendix A

## *Perspectives on Resource-dependent Development*

Before discussing particular elements of the proposed project, it is useful to put in perspective the socio-economic impacts of resource-dependent development. Generally, and from a variety of approaches, the accumulating social science evidence for the US and Canada is increasingly negative about the socio-economic outcomes (income, unemployment, poverty, etc) associated with mining and other resource-dependent development. There are some factors that can improve socio-economic outcomes (such as proximity to metropolitan centres) and there are varying stages in resource development (better earlier, worse later) that can be important. Overall, though, the evidence suggests there should be no general expectation of long-term positive outcomes relative to average outcomes or the status quo.

Of course, I am not referring here not to the metropolitan centres (such as New York, Houston, London, Toronto, or Calgary) where ownership of oil or mining corporations is concentrated. I am referring to the *host* communities and regions where production and most transport takes place. The existing geographical and social separation of ownership and the socio-economic consequences of resource production underlie many debates about resource-dependent development.

For the US, Freudenburg and Wilson (2002) have conducted one of the broadest reviews of quantitative studies (amassing 301 findings) of the impact of mining (including oil-extraction) on regional outcomes, such as income, unemployment and poverty. After comparing strictly non-metropolitan mining regions to other non-metropolitan regions, the review concluded that about half of all published findings showed negative economic outcomes with the remaining divided between favourable and neutral/indeterminate outcomes. The limited positive outcomes were more associated with incomes rather than unemployment rates or poverty, with the western US (relatively large new coal strip mines), and with years prior to 1982.[20] The Freudenburg-Wilson review concludes: "Until or unless future studies produce dramatically different findings, there appears to be no scientific basis for accepting the widespread, 'obvious' assumption that mining will lead to economic improvement" (549).

For Canada, too, there have been several studies. Stedman et al. (2004) using cross-sectional 1996 census data on 5,243 census subdivisions (roughly, municipalities) examined the relation between resource-reliance (by proportion of jobs in each resource industry) and community well-being, defined in terms of education status, 5-year migration, family poverty, unemployment, and mean family income. The results were seen to support US research. "Mining places differ very little from rural CSDs [census subdivisions] as a whole: there are no significant differences in education, migration, poverty, and unemployment," except (in1996) for relatively higher median family income (Stedman et at. 2004: 226). This study is actually one that presents resource-dependent in a more positive light. Agencies such as Natural Resources Canada prefer to characterize such communities as "resource-reliant." The study finds positive outcomes for communities with energy-reliance, which includes oil extraction, though it recognizes this is related to the fact that oil is the "newest industry" in a "burgeoning" period of expansion. As well, there are no controls for

[20] The observation of higher (average or median) income together with higher unemployment or poverty is consistent with a point I will make later, that resource-export development typically has the impact of increasing socio-economic inequality.

how close the resource-dependent community is to metropolitan centres (such as Calgary and Edmonton).

In an earlier study using community-level census data for 1981 and 1991, Bollman (1999) found that resource-dependency (the percentage of employment in primary industries, including agriculture, fishing, forestry, mining, oil) was strongly associated with lower growth. Mining resource areas were associated with relatively lower levels of growth of aggregate community earnings, average earnings per worker, average hourly wage rates, and community employment. Bollman also found further evidence of the advantage in growth for communities closer to a metropolitan centre.

The evidence about mining dependent development is directly relevant to oil and natural gas development. The community outcomes of oil and gas development, once beyond the start-up or boom phase, tend to converge with those generally for resource-dependent areas, particularly mining, though oil and gas tend to have lower direct employment impacts. Longer-term patterns can be obscured in narrowly cross-sectional studies, which are usually based on data for a single year of the evolution of an industry, region, or community.[21] Longer-period historical and longitudinal studies can give a clearer picture of what the consequences of the resource-extraction cycle and development are for communities and regions that depend on the extraction and export non-renewables.[22]

Northern and resource-dependent regions each have there own unique as well as shared features, including a history of colonialism. Like the NWT, regions such as Northern Ontario and Northern Québec are endowed with resources and lands that in large part neither the Aboriginal people nor the settler populations owned or controlled directly through their own democratic or sovereign institutions. Major mining development has been going on in Northern Ontario for over 120 years and many billions of dollars of its mineral wealth has been sent out to "southern markets"(including international markets). But what have been the long-term outcomes for the population? Despite occasional booms, and small pockets of high wages and temporary prosperity, the general tendency of development in Northern Ontario–especially since the 1980s--has been one of continued resource-export dependency, high levels of the unemployment, poverty, and lack of employment opportunity, lower levels of education and health, an outflow of the younger population southward, and continuing unresolved issues of land claims and self-government. Similar patterns are easily seen in the northern areas of Manitoba, Saskatchewan, BC, and in the Atlantic provinces, areas dominated by resource-export development coupled with absentee ownership and control.

The mass media have encouraged a common and simplistic association of oil and gas development with boom times and with Alberta's current wealth. By contrast, those of us in hinterland regions are treated more often as "dependent," economically more or less depressed, and needing the type of development Alberta has. At one level, this is right, though not in the way usually supposed. To begin, a significant part of Alberta's provincial wealth and "have" status depends on something the NWT has never had--ownership and control of oil, gas and other natural resources, which Alberta obtained in 1930 during the Great Depression, 25 years after becoming a province. Alberta's relative success also derives from other important factors, particularly from its productive agriculture, a significant secondary industry (now including petrochemicals), relatively strong locally

[21] Cross-sectional studies have also tended to favour the use of mean (average) and median values in variables, rather than distributional impacts or structural trends and to avoid measures of what is sometimes called the economic "adjustment process."

[22] Some of my own work takes this direction (for example, Leadbeater 1997, July 1998, August 1998, Leadbeater and Suschnigg 1997).

controlled utilities and infrastructure, a high level of public education and independent research capacity, including one of the largest research universities in Canada. Much of this started well before the oil boom, and there is no guarantee that boom will last. Alberta has had declining conventional oil production since 1973 and declining natural gas production since around 2001. Now the province's leadership is pressing frantically forward on one of the most environmentally dubious resource projects in Canadian history, the Athabasca tar sands. Indeed, the province is so caught by a particular type of resource dependency and narrowed elite interest that it feels compelled to attack and dissociate itself from even such relatively moderate environmental objectives as the Kyoto Accord.[23]

For an even more cautionary story in North American, one might look at the state of Oklahoma, which has a population size of population (about 3.5 million) and achieved statehood in 1907, soon after Alberta became a province. Oklahoma has pretty well exhausted their oil and gas resources and is now about the 6th poorest state in the US by median household income.[24] This is an illustration that oil and gas wealth is no assurance of sustained economic development or the well-being of the population. Phillips Petroleum, who made a fortune out of Oklahoma, now no longer has even its headquarters in the state. Along with Conoco, (once based in Utah), Phillips has moved on to Houston, Texas.

One might also look closer to home at the experience of Norman Wells. This is Imperial Oil's largest conventional oil field. It has been producing since the 1940s, was much expanded in the 1980s, and is now declining with the likely exhaustion of the resource within a decade or so. Natural Resources Canada maps Norman Wells as the most "energy-reliant" (or dependent in my terms) community in the NWT, with a very high index of 79 percent.[25] What does the North or the town of Norman Wells or adjacent communities have to show for this many-decades long exploitation and export of wealth? An outstanding level and exemplary inclusivity in education, a major secondary industry, the overcoming of poverty, a top-notch research institute, some important community architecture? I ask these questions provocatively to emphasize that the wealth generated by absentee-owned and controlled non-renewable resource export may not be shared with those who host it.

Banta (2006/07: 81) describes a pattern which is typical:

> *Oil production from the Norman Wells field was increased in 1985 and transported by pipeline along the Mackenzie Valley, passing by such communities as Tulita and Wrigley on its way to Alberta. The federal government acknowledged that these and other communities could be affected by the pipeline's construction, and provided $21.4 million to support northerners in dealing with expected adverse opportunities and adverse effects... More than $4 billion worth of oil from Norman Wells, an average of $215 million per year, has flowed past Wrigley and Tulita since 1985, and the*

[23] As someone who has lived in and studied Alberta, I would encourage those who assume it as a model to take a more careful look. Consider, for example, with all its wealth, how far Alberta is from resolving issues of Aboriginal sovereignty and socio-economic rights, and how these have been affected by the power of resource interests. Consider with all its resource wealth the major social inequalities within Alberta, such as serious homelessness and one of the biggest female to male wage gaps in Canada. Consider too its continuing regional inequality, differential urban-rural services, and monotonic, environmentally destructive suburban sprawl.

[24] Also based on US 2000 census data, Oklahoma had the 8th lowest per capita income, the 12th lowest personal per capita income, and was second from the bottom in terms of the number of places with per capita incomes above the US national average (only 3.6 percent). An easily accessible source: http://en.wikipedia.org/wiki/States_of_the_United_States_by_income Oklahoma also has for many years had above average rates of poverty, which is also well known, for example, at http://www.irp.wisc.edu/faqs/faq3.htm

[25] Natural Resource Canada's approach to resource dependency has weaknesses, but the mapping is useful: http://atlas.nrcan.gc.ca/site/english/maps/environment/forest/dataandmappingnotes.html

> *field is still producing. Last year alone the federal government took $132 million in profits from Norman Wells and corporate income taxes. Meanwhile, 56 percent of the adults in Tulita and 71 percent in Wrigley have not finished high school. Unemployment in Tulita is 19 percent; in Wrigley it is 29 percent. Eighty-one percent of the population in Tulita reported contaminated water at some time during 2000.*

Consider too the relative insecurity, instability, and arbitrariness flowing from a high level of absentee-owned resource-dependency. Between 1996 and 2001, when many mining communities in Canada lost population, the population of Norman Wells plunged, about nine percent (compared to about two percent for the NWT), and by 2005 had still not fully recovered.[26] Despite community needs and the enormous wealth that Imperial Oil had taken from this area, the corporation closed its refinery. In 1998, the town still reeling, Imperial further proposed to move one of its departments from permanent residency to a rotational basis, affecting 12 employees. Some comments of Norman Wells' mayor, Frank Pope, were recorded (as reported by Greer (1998)):

> *The mayor said the move could lead to a glut of Imperial Oil houses on the Norman Wells market and a new subdivision in the town to continue being inactive...*
>
> *"This is a major change, especially when it was only four years ago that they went from a rotational basis to bringing all the workers into the town to live here permanently," said Pope.*
> *"I guess we, as a community, are at the mercy of Imperial Oil's whims as to its way of doing business."*
>
> *...Pope said during a council meeting Tuesday night, Imperial Oil's annual report for 1997 was read, highlighting all the positive things it does in the North.*
>
> *"We feel this change of policy flies in the face of their annual report and all the good things they tell us they do."*

Such experiences are many and salutary.[27] For some of us they are a message to correct imbalances of power and information, to assert serious mutual obligations, to learn from past mistakes, to insist on changes to long-term structural conditions.

## *Northerners are Not a Burden on Canadian Society*

In tandem with the vision of oil and gas bounty, hinterland areas are subjected to a negative metropolitan elite view of our economic role, particularly our "dependency" (except for the acceptable dependency of resources and tourism). That view creates a common impression that we are burdens on the rest of society, a permanent drain on the public purse. This distorted representation, which has also been visited on the people of the Atlantic provinces, is important to address. It is often internalized by people living in hinterland areas. It undermines the confidence of people in their capacities, contributions,

[26] The NWT Bureau of Statistics has figures of 839 (1996), 767 (2001), and 818 (2005) for Norman Wells. Statistics Canada's census data suggests the decline was even worse, from 798 to 666 or about 17 percent.
[27] A useful and concentrated set of related NWT examples is described by Banta (2006/07).

and potential and opens us up to accept questionable proposals and terms "for the good of the country."[28]

Contrary to popular impression, the Federal Government's own official measure of economic dependency shows that the people of the NWT overall are much less dependent than the Canadian average–by nearly half (8.5 compared to 15.7) in 2004–and that this is true both for males and for females. Economic dependency here refers to the ratio of transfer program money (EI, CPP, social assistance, etc) received by individuals relative to their employment income, whether wages, salaries or self-employment income. The ratio could more accurately be called a transfer dependency ratio. In Appendix B, I have included a brief explanation of the economic dependency ratio as well as how it can be analyzed. Appendix Table 1 shows that this relatively lower level of economic dependency in the NWT covers the entire period for which data are available (1990-2004).

A second table (Appendix Table 2) takes the analysis further to look at some of the communities of the NWT and the number of persons involved and money received (for 2004, the most recent year for which data is available). The ratio is decomposed to help determine the main factors accounting for the lower level of the NWT ratio. It turns out that, while the proportion of the territorial population needing transfers is somewhat higher than the average for Canada, the average amount used per person is actually much lower than the average for Canada. In 2004, the average value of transfer payments per recipient was $3,359 compared to the average for Canada of $6,157. At the same time, average employment incomes in the NWT (unadjusted for price differences) tend to be higher. Hence, as a whole the people in the NWT make a much lower draw on Canada's social programs. Of course, this in no way is meant to question the real need and rights to social programs in the NWT or elsewhere in Canada, only to criticize a common and destructive myth.

Within the NWT some areas are faced with serious economic disadvantages, especially compared to Yellowknife. This is reflected in their having higher economic dependency ratios. These ratios are much higher generally because income per person is much lower and there is a higher level of program take-up (which itself is related to much lower local employment rates). But in even these cases the average amount of transfers per recipient is most often below the average for Canada. Transfer ratios are also available by programs. In 2004, the ratio for territorial residents for Employment Insurance is about the average for Canada. It is somewhat higher for Family Benefits. For other programs ratios are lower, often much lower, than for Canada, including for the GST rebate, the Child Tax Benefit, Old Age Security and Supplements, the CPP, Workers Compensation, and Social Assistance.

One can also look at the dependency notion in the context of government to government transfers and expenditures, particularly between the Territorial and Federal governments. This hinges mainly on how the Territorial Formula Financing is understood.[29]

[28] A salient example of this was the notorious Churchill Falls power 65-year agreement signed with Québec in 1969 by Premier Smallwood of Newfoundland under pressure from the Federal government to accept its weak terms for the good of Canada. The price was so low that the Québec government was able to make billions at Newfoundland's expense selling surplus power to the US. The experience with Churchill Falls, which was at the time the largest hydro-electric project in Canada, became part of the history leading the current Newfoundland government to take a much stronger position in its negotiations with Inco over the Voisey's Bay nickel mining project.

[29] The Federal government's own Expert Panel (2006) and its website accepts some similar points in its understanding of the Federal equalization system.

In 2004, Territorial Formula Financing (TFF) accounted for about $798 million or two-thirds of gross Federal expenditure in the NWT. The net Federal expenditure was less, about $524 million.[30] TFF is paid for out of Federal tax revenues, not transferred from provincial or territorial government tax revenues. It does not imply the NWT is somehow more needy or demanding. In fact, there are eight other provinces and two other territories who receive equalization payments. Such payments provide public services that are on a reasonably equal basis across the country. It is not about providing more or a higher standard of public services in some areas than in others. Indeed, hinterland areas tend in practice to have less or lower levels of public services. There is simply no serious evidence that people in the NWT receive a higher level of services than elsewhere in Canada, and much that suggests the opposite.

In short, a critical scepticism is fully warranted about claimed benefits to host areas from resource mega-projects of the type proposed. Also warranted is a critical stance towards any suggestion to or pressure on NWT people or to Canadians to accept the proposed Project, despite its major problems, to make up for the NWT's alleged economic "dependency."

[30] In 2004, the Federal government spent about $1,197 million gross and $524 million net--after $673 million revenue, received mainly from personal income taxes (about $154 million), corporate income taxes (about $122 million), and royalties (about $270 million) in the NWT. The largest part of the federal spending was transfers to the GNWT ($798) for the equivalent of provincial public services and, secondly for Federal government public services ($222 million). The largest part of the $798 million federal funds to the GNWT (over 90 percent) have been through Territorial Formula Financing (TFF) which is part of the Federal equalization system provided for in the Canadian constitution; the remainder is through Canada Health and Social Transfer funding. The variations in equalization payments across provinces and territories is due mainly to costs of provision, on the one hand, and the taxation capacity on the other. The dependency myth about transfers to the NWT is often simply an indirect way of attacking public services to a common standard.

**Appendix Table 1: Economic dependency ratios for Canada and the NWT, 1990-2004**

| Year | Canada | | | NWT | | |
|---|---|---|---|---|---|---|
| | males | females | total | males | females | total |
| 1990 | 16.8 | 27.7 | 20.4 | 6.5 | 13.9 | 9.1 |
| 1991 | 19.6 | 31.0 | 23.5 | 7.0 | 15.1 | 9.9 |
| 1992 | 22.1 | 32.7 | 25.8 | 9.4 | 15.3 | 11.6 |
| 1993 | 22.3 | 35.5 | 26.9 | 9.8 | 16.6 | 12.4 |
| 1994 | 22.0 | 35.9 | 26.8 | 9.0 | 16.4 | 11.8 |
| 1995 | 21.5 | 36.1 | 26.6 | 8.8 | 16.8 | 11.8 |
| 1996 | 13.8 | 29.7 | 19.4 | 8.3 | 16.9 | 11.5 |
| 1997 | 12.6 | 28.6 | 18.2 | 6.8 | 13.4 | 9.3 |
| 1998 | 12.2 | 27.6 | 17.6 | 7.5 | 13.3 | 9.7 |
| 1999 | 11.6 | 25.8 | 16.6 | 7.2 | 12.5 | 9.4 |
| 2000 | 10.8 | 24.4 | 15.6 | 6.8 | 13.0 | 9.3 |
| 2001 | 10.8 | 24.2 | 15.6 | 6.2 | 12.1 | 8.5 |
| 2002 | 11.2 | 24.7 | 16.1 | 6.4 | 11.9 | 8.5 |
| 2003 | 11.0 | 24.4 | 16.0 | 6.5 | 12.1 | 8.7 |
| 2004 | 10.8 | 24.1 | 15.7 | 6.3 | 11.7 | 8.5 |

Note: The transfer (or economic) dependency ratio is of government transfers (federal plus provincial or territorial) relative to employment income. Prior to 1996, the transfers included private pensions; they are excluded from 1996 to 2004.

Source: Statistics Canada Small Area and Administrative Data Division.

**Appendix Table 2: Economic dependency ratios and the NWT, 2004**

| | | Canada | NWT | Aklavik | Fort Good Hope | Fort McPher-son | Fort Provi-dence | Fort Simpson | Fort Smith | Hay River | Inuvik | Norman Wells | Behchoko | Tuktoy-aktuk | Wrigley | Yellow-knife |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Economic dependency ratios | males | 10.8 | 6.3 | 24.4 | 12.7 | 12.6 | 24.7 | 9.4 | 9.7 | 7.1 | 6.5 | 2.8 | 11.9 | 15.6 | 29.0 | 3.8 |
| | females | 24.1 | 11.7 | 35.8 | 26.0 | 29.8 | 26.3 | 13.8 | 14.2 | 13.7 | 11.6 | 6.2 | 33.7 | 30.8 | 43.5 | 7.3 |
| | total | 15.7 | 8.5 | 29.7 | 18.4 | 19.6 | 25.4 | 11.2 | 11.8 | 9.6 | 8.8 | 3.9 | 19.7 | 20.9 | 33.9 | 5.2 |
| Transfer recipients (number of) recipients) | males | 6422440 | 14240 | 190 | 190 | 270 | 290 | 530 | 790 | 1440 | 1130 | 280 | 600 | 280 | 60 | 6710 |
| | females | 8940860 | 13710 | 170 | 170 | 240 | 260 | 470 | 870 | 1370 | 1180 | 230 | 540 | 250 | 40 | 6580 |
| | total | 15363300 | 27950 | 360 | 360 | 510 | 550 | 1000 | 1650 | 2820 | 2320 | 500 | 1130 | 530 | 100 | 13290 |
| Amount of transfers ($ '000) | males | 40950389 | 41525 | 888 | 605 | 918 | 1462 | 1723 | 2950 | 4787 | 3391 | 550 | 2169 | 1232 | 330 | 14645 |
| | females | 53639183 | 52350 | 1149 | 915 | 1470 | 1285 | 1856 | 3681 | 5623 | 4870 | 587 | 3456 | 1293 | 253 | 18772 |
| | total | 94589572 | 93875 | 2037 | 1521 | 2389 | 2747 | 3579 | 6632 | 10411 | 8261 | 1137 | 5625 | 2525 | 583 | 33416 |
| Average transfers per recipient ($) | males | 6376 | 2916 | 4674 | 3184 | 3400 | 5041 | 3251 | 3734 | 3324 | 3001 | 1964 | 3615 | 4400 | 5500 | 2183 |
| | females | 5999 | 3818 | 6759 | 5382 | 6125 | 4942 | 3949 | 4231 | 4104 | 4127 | 2552 | 6400 | 5172 | 6325 | 2853 |
| | total | 6157 | 3359 | 5658 | 4225 | 4684 | 4995 | 3579 | 4019 | 3692 | 3561 | 2274 | 4978 | 4764 | 5830 | 2514 |
| Employment income earners (number of earners) | males | 9013830 | 13220 | 150 | 170 | 220 | 240 | 480 | 700 | 1310 | 1060 | 280 | 530 | 240 | 50 | 6440 |
| | females | 8261860 | 11830 | 120 | 140 | 180 | 200 | 380 | 720 | 1170 | 1040 | 210 | 390 | 180 | 30 | 5950 |
| | total | 17275690 | 25060 | 270 | 310 | 400 | 440 | 860 | 1420 | 2490 | 2100 | 490 | 930 | 410 | 80 | 12390 |
| Amount of employment income ($ '000) | males | 380604792 | 655393 | 3644 | 4749 | 7284 | 5929 | 18373 | 30455 | 67831 | 52014 | 19945 | 18265 | 7906 | 1138 | 380681 |
| | females | 222486503 | 446460 | 3214 | 3514 | 4928 | 4888 | 13467 | 26003 | 40947 | 41866 | 9516 | 10254 | 4197 | 582 | 257473 |
| | total | -470650529 | 1101853 | 6858 | 8263 | 12212 | 10817 | 31840 | 56458 | 108778 | 93880 | 29461 | 28519 | 12104 | 1720 | 638154 |

| | | Canada | NWT | Aklavik | Fort Good Hope | Fort McPher-son | Fort Provi-dence | Fort Simpson | Fort Smith | Hay River | Inuvik | Norman Wells | Behchoko | Tuktoy-aktuk | Wrigley | Yellow-knife |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average income per earner ($) | males | 42225 | 49576 | 24293 | 27935 | 33109 | 24704 | 38277 | 43507 | 51779 | 49070 | 71232 | 34462 | 32942 | 22760 | 59112 |
| | females | 26929 | 37740 | 26783 | 25100 | 27378 | 24440 | 35439 | 36115 | 34997 | 40256 | 45314 | 26292 | 23317 | 19400 | 43273 |
| | total | 34910 | 43969 | 25400 | 26655 | 30530 | 24584 | 37023 | 39759 | 43686 | 44705 | 60124 | 30666 | 29522 | 21500 | 51506 |
| Transfer recipients/earners | males | 0.71 | 1.08 | 1.27 | 1.12 | 1.23 | 1.21 | 1.10 | 1.13 | 1.10 | 1.07 | 1.00 | 1.13 | 1.17 | 1.20 | 1.04 |
| | females | 1.08 | 1.16 | 1.42 | 1.21 | 1.33 | 1.30 | 1.24 | 1.21 | 1.17 | 1.13 | 1.10 | 1.38 | 1.39 | 1.33 | 1.11 |
| | total | 0.89 | 1.12 | 1.33 | 1.16 | 1.27 | 1.25 | 1.16 | 1.16 | 1.13 | 1.10 | 1.02 | 1.22 | 1.29 | 1.25 | 1.07 |
| Average transfer/Average income | males | 0.15 | 0.06 | 0.19 | 0.11 | 0.10 | 0.20 | 0.08 | 0.09 | 0.06 | 0.06 | 0.03 | 0.10 | 0.13 | 0.24 | 0.04 |
| | females | 0.22 | 0.10 | 0.25 | 0.21 | 0.22 | 0.20 | 0.11 | 0.12 | 0.12 | 0.10 | 0.06 | 0.24 | 0.22 | 0.33 | 0.07 |
| | total | 0.18 | 0.08 | 0.22 | 0.16 | 0.15 | 0.20 | 0.10 | 0.10 | 0.08 | 0.08 | 0.04 | 0.16 | 0.16 | 0.27 | 0.05 |

# Appendix B [31]

Statistics Canada produces economic dependency ratios (EDR) that indicate a type of transfer dependency. Statistics Canada's economic dependency ratio simply takes the ratio between total transfer incomes received and total employment incomes received in a given geographical area:

$$\text{EDR} = \frac{\text{transfer income (\$)}}{\text{employment income (\$)}} \times 100$$

Increases (or decreases) in transfer dependency can take place in different ways. In principle, every economic dependency ratio is decomposable into the following for any given period:

$$\text{EDR} = \frac{\text{transfer income (\$)}}{\text{employment income (\$)}} \times 100$$

$$= \frac{\text{number of recipients} \times \text{ rate of benefits}}{\text{number of earners} \times \text{rate of earnings}} \times 100$$

$$= \frac{\text{number of recipients}}{\text{number of earners}} \times \frac{\text{rate of benefits}}{\text{rate of earnings}} \times 100$$

The second formula shows the four components that make up the transfer-type economic dependency ratio. The third formula shows more clearly that the ratio can be treated as being driven by two underlying or (sub-) ratios. One is the ratio of transfer recipients to employment-income earners for the given period. The other is the ratio of the rate of transfer benefits (or the average benefit) to the rate of earnings (or the average earnings) for the given period. Thus, an increase in the economic dependency ratio for a given geographical area over two years (or any two or more given periods, depending on data) can take place through any one of the four components by itself or in combination:

1. an increase in the number of transfer recipients, such as occurred when the numbers using EI increases following layoffs;
2. an increase in the average benefits per recipient per year, either through a higher category of benefit and/or through a longer duration of the benefit during the year;
3. a decrease in the number of employment-income earners, such as with a closure or massive loss of jobs;
4. a decrease in the average earnings, such as through reduced wage rates or numbers of weeks worked in a year.

[31] The Appendix has been somewhat modified from Leadbeater (1997).