Evidence of Jim Lazar, Consulting Economist

on behalf of

Time to Respect Earth's Ecosystems [TREE]
and
Resource Conservation Manitoba [RCM]

for the

Manitoba Hydro Cost of Service Methodology Review

March 15, 2006

With Manitoba Government News Release

BUDGET 2002 AT A GLANCE

April 22, 2002

133 Riley Crescent
Winnipeg, MB R3T 0J5
March 15, 2006

Mr. Gerry Gaudreau, Executive Director and Secretary
The Manitoba Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Sir:

Re: RCM/TREE Evidence for
Manitoba Hydro Cost of Service Study Methodology Review
and an Objection

Attached please find seven copies of the evidence of Resource Conservation Manitoba (RCM) and Time to Respect Earth's Ecosystems (TREE) for this proceeding. Electronic copies of this material will be distributed to the participating parties.

This material consists of the evidence of Mr. Jim Lazar with six of his attachments plus an April 22, 2002 Manitoba Government News Release, which includes the government's understanding of the basis for the dividend paid to government in that fiscal year.

In addition, we wish to note that Manitoba Hydro declined to answer a number of questions pertaining to externalities and offered this explanation in response to RCM/TREE/MH II-25:

> *Whether or not to include externalities in revenue requirement is a matter outside the scope of a cost of service methodology review.*

RCM and TREE take exception to this judgment and refusal to provide some information pertinent to the determination of externalities. We remind the PUB and MH that Guideline 1 of Schedule B of the Sustainable Development Act (to which MH is subject) prescribes full-cost accounting. Mr. Lazar's evidence, like that of the Pembina Institute and Mr. Steven Weiss in last year's Centra proceedings, demonstrates how that can be done and further demonstrates its relevance to a COSS.

At this point we simply wish to register our rejection of MH's judgment and objection to the withholding of information. We propose that the debate on the issues should proceed in the course of the current process.

Sincerely,

Peter Miller for RCM/TREE

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Q. Please state your name, address, and occupation, and summarize your utility regulation experience.

A. Jim Lazar, 1063 Capitol Way S. #202, Olympia, Washington, 98501, USA. I am a consulting economist specializing in utility rate and resource issues. I have been engaged in utility rate consulting continuously since 1979. During that time, I have appeared before many local, state, and federal regulatory bodies, authored books, papers, and articles on utility ratemaking, and have been a faculty member on numerous occasions at training sessions for utility industry analysts.

I have appeared before numerous regulatory commissions, including the British Columbia Utilities Commission, and state Commissions of Washington, Oregon, Idaho, Montana, Arizona, Illinois, Hawaii, and California.

I am also an Associate with the Regulatory Assistance Project (RAP), headquartered in Gardiner, Maine; my work with RAP involves advising regulatory bodies throughout the world on the implementation of effective utility oversight programs. In that capacity I have assisted with utility regulatory training programs in the United States, India, China, the Philippines, Brazil, Namibia, Mozambique, Mauritius and Indonesia.

I have previously appeared before the Manitoba PUB in two proceedings involving Manitoba Hydro, in 2002 and 2004.

Q. What is the purpose of your testimony in this proceeding?

A. I have been asked to review the Company's evidence and cost of service methodologies, to comment on those methodologies, and to recommend alternatives which may more accurately reflect the total cost of providing service. At the time the proceeding was initiated as a general rate application, I was also asked to comment on the proposed residential and general service rate design, and to propose alternatives that would more closely align rates with total costs. Now that the proceeding has been limited to cost of service issues, I have deferred that portion of my assignment.

Q. What are the principal findings that you present?

A. First and foremost, I find that the "Recommended Method" of computing cost of service advocated by Manitoba Hydro is a progressive step forward, and improves the accuracy of cost determination and allocation in Manitoba. However, even this improved method still uses all of the net export revenues to offset utility costs, and this is inefficient, as consumers see electricity prices that fail to reflect the full cost of providing service. Customers are assigned only about 78% of the *embedded* cost of providing their service. Given experience in the past, with the Government appropriating a dividend from MH in 2002/03, this may not fully reflect the level of revenues that MH needs to collect to cover all of its costs.

Second, I present alternatives built upon this Recommended Method that incorporate the marginal environmental costs associated with energy consumption during the various rate periods used in the Recommended Method. This shows that the residential class is providing a greater revenue to cost ratio than shown in the Recommended Method, simply because energy costs (and therefore environmental costs associated with generation) are least significant for this class. The difference is greatest for the large general service classes. Because any reduction in energy consumption in Manitoba results in lower emissions from the power plants in the export market – the majority of which are coal-fired power plants, I recommend that the MPUB direct MH to consider emissions as an opportunity cost associated with energy consumption for all classes.

Third, I estimate the difference for each class between current revenues and the costs associated with applying marginal generation costs in place of embedded generation costs. MH has indicated that marginal energy costs are 8.58 cents/kWh in winter, and 4.89 cents in summer; these are dramatically higher – more than two times -- the generation costs included in current rates.

Fourth, I estimate the difference for each class between current revenues and the costs associated with marginal generation costs and CO_2 costs.

Fifth, based on elasticity estimates provided by MH, I have estimated that total electricity consumption in Manitoba could be reduced by about 30% if these marginal costs were utilized in setting marginal rates. Based on the estimate of marginal generation costs that could be recovered from the export market, this could lead to a net inflow of funds to Manitoba of as much as $388 million per year. While I certainly do not recommend moving rates up this much in the short run, this could be a significant stimulus to the Manitoba economy.

Finally, I make the observation that under the Current Method and the Recommended Method, the net export revenue is divided among the MH customer classes based on electricity usage. I believe that this principle puts the entire net benefit at risk for

Manitoba citizens, because these low electricity rates are likely to attract a few energy-intensive industries. These new industries could consume the surplus power, eliminate the export revenue, and drive up costs for all of the businesses and citizens of Manitoba, while providing very few jobs and very little tax revenue. Taking steps to prevent this is probably crucial to the economic health of Manitoba.

Q. What exhibits are you sponsoring in this proceeding?

A. I am presenting the following exhibits.

JL-1 is a summary of my qualifications and experience.
JL-2 is an estimate of the environmental costs associated with electricity consumption in the four rate periods used by MH in the Recommended Method cost of service analysis.
JL-3 is an estimate of the impact on the COSS results in the Recommended Method that would be expected if these marginal environmental costs were included within the COSS.
JL-4 is an estimate of the revenue to cost ratios that would result if the marginal summer and winter energy costs were substituted for the currently applied energy costs.
JL-5 is an estimate of the revenue to cost ratios that would result if both CO2 costs (at $20/tonne) and marginal generation costs were substituted within the Recommended Method.
JL-6 is an estimate of the elasticity in domestic electric sales and increased export revenue that would result from implementing rates based on full costing, as well as an estimate of the potential adverse impact to the Manitoba economy from attraction of new electroprocess industry if Manitoba does not do so.

I had originally planned to present alternative rate designs for the residential class, and the impact of applying these rate designs on sales and cost responsibility. However, since MH has withdrawn the proposed rate increase and rate design adjustments, it is my understanding that rate design is beyond the scope of this proceeding.

Q. What is your principal recommendation in this proceeding?

A. The most important recommendation is that the MPUB direct MH to incorporate into its COSS environmental and marginal generation costs avoidable through increased exports as a cost associated with providing service in computing the cost of service. It would be up to the Manitoba government to determine if these costs should be collected in the revenue requirement and remitted by MH. Other expenditures of revenue for energy-related investments and services fall within the purview of MH and the MPUB to determine. At a minimum, these very real social costs should be recognized as a cost of providing service to each customer class.

Recommended Method is an Improvement

Q. Do you have experience preparing and reviewing electric utility cost of service studies?

A. Yes, I have presented cost of service studies in many proceedings, beginning in the early 1980's, including both marginal cost of service studies and embedded cost of service studies. I was a consultant to the Arizona Corporation Commission and prepared a handbook on cost of service methods for that client. I have taught seminars in cost allocation as part of several of my international training assignments.

Q. Have you reviewed the four cost of service approaches presented by MH, the "Current Method," the "NERA Method," the "Generation Vintaging Method," and the "Recommended Method"?

A. Yes, I am familiar with the methods used, and have reviewed each of the studies in the context of my extensive experience preparing both embedded and marginal cost of service studies.

Q. What are the key changes in the Recommended Method compared with previous methods?

A. As I understand it, the principal differences are the use of time-weighted energy costs in place of demand/energy classification methods, treatment of export as a customer class, the treatment of the Zones 2 and 3 subsidies, and the treatment of export revenues. The treatment of export as a customer class means that specific generation costs are allocated to that class – so that the "net revenue" is available for use offsetting other Manitoba costs. In the past, Zone 2 and 3 subsidies were assigned to the customer classes in which they occurred. They are now a "first call" on net export revenues. Finally, the remainder of export revenues is allocated on the basis of total allocated costs (including distribution costs) not just on the basis of generation and transmission. I believe all of these are progressive steps forward.

Q. Is the proposed treatment of the net export revenue the only appropriate way to utilize this net income?

A. No. This revenue could be applied to energy efficiency measures or to non-utility benefits. As I discuss below, under a full-costing approach, MH rates would be moved toward recovering the full cost of providing service – including both environmental costs and marginal generation costs. The additional revenue – significantly larger than the net export revenue identified by MH – could be used for any combination of energy efficiency, environmental mitigation or benefits, low-income assistance, or other societal purposes.

Q. In your opinion is the MH Recommended Method a reasonable approach?

A. I believe all of the changes are improvements and should be approved by the MPUB. One holdover calculational element, in my opinion, is less than optimal, and, as I discussed above, the studies only address the allocation of costs directly paid by MH, not the full societal costs of providing service. With those two exceptions, I think it is a very sensible approach.

Q. Is your disagreement with one calculational element a reason to discount the Recommended Method?

A. No. Frankly, it is quite unusual for one rate analyst to take only a single exception to another analyst's study methodology. There are so many ways to measure cost of service that we typically have multiple disagreements.

The decision by the MPUB to apply net export revenue first to offset the Zone 2 and Zone 3 subsidies is an appropriate use of this to meet a legislated obligation without unfairly burdening consumers in the greater Winnipeg area with the higher distribution costs associated with providing rural service. The decision to treat the Export customers as a class is a sensible change in the study, allowing explicit identification of the costs of providing export service. This is particularly appropriate because MH has been building generation in advance of Manitoba needs, with long-term exports as a consideration, and it is important to know that this policy is profitable for Manitoba. The decision to allocate the net export revenue on the basis of total cost, rather than generation and transmission cost is a step in the right direction.

The move to time-weighted energy costs is particularly important. This is the way that North American energy markets price generation. The former, more rudimentary demand/energy method is obsolete in this commercial environment.

Q. Is the allocation of net export revenue on the basis of total utility costs the best way to allocate these net revenues?

A. Probably not. From an economic efficiency perspective, it would be better to not allocate it to electric consumers at all and to use it for non-utility purposes, so that electric rates more closely reflect total marginal societal costs. Alternatively, it would be better to allocate it to the less-elastic elements of utility service (distribution, customer service, and other non-generation), so that the incentive to conserve electricity is not adversely affected by artificially reduced energy prices. But, the change from generation and transmission <u>only</u> to the Recommended Method offsetting all utility costs is a definite improvement in economic efficiency, simply because a *portion* of these net revenues now offset the inelastic components of consumption.

Q. What is the one calculational element that you noted above?

A. That one exception is the classification of the distribution infrastructure partly as customer-related. This is an issue that has been raised before, and I do not seek to argue it in detail in this evidence.

I continue to believe that the reason that distribution systems are built is to deliver significant amounts of energy – not simply to reach customers. In extremely remote areas, including those in Manitoba, the utility does NOT extend service. Only where it determines that there is a significant demand for kilowatt-hours does it make sense to build distribution systems.

At my request, in response to RCM/TREE II-38, MH prepared an alternative to its Recommended Method that utilized the demand-based classification of the distribution infrastructure that I believe more accurately reflects cost-causation. The table below compares those results to those from the MH Recommended Method.

Comparison of MH Recommended Method to 100% Demand Method For Distribution Infrastructure

Class	Revenue to Cost Ratio MH Recommended Method	Revenue To Cost Ratio Distribution 100% Demand
Residential	97.0%	99.7%
Gen Svc Small Non-Demand	107.4%	107.9%
Gen Svc Small Demand	105.4%	101.3%
Gen Svc Medium	100.6%	96.6%
Gen Svc – Large 0 – 30 kv	90.1%	86.5%
Gen Svc Lg 30 – 100 kv	101.5%	101.5%
Gen Svc Lg > 100 kv	103.2%	103.2%
Area and Roadway Lighting	107.1%	108.2%

Q. What observations do you make from this data?

A. These results generally show that with the distribution infrastructure classified as demand-related, the residential class is closer to parity – but still within the 95% - 105% zone of reasonableness. The General Service Small Demand class moves into the Zone of Reasonableness. The General Service Medium class declines significantly, but remains in the Zone of Reasonableness. The General Service Large class, already well below the Zone of Reasonableness, declines even further. The classes served at higher voltages are unaffected as they do not use the distribution system.

While I believe these results are more accurate than the MH Recommended Method, I do not consider any of these changes so dramatic as to make it important to pursue this methodology in this proceeding. I believe it is more important to focus on issues of efficiency and environmental costing, as I do below when I incorporate environmental opportunity costs into the MH Recommended Method.

Q. What is the second exception?

A. Although the MH method more or less adequately tracks the embedded ***costs*** of the various classes, their recommendations with respect to ***revenues*** depart from the principles of cost responsibility and economic efficiency. I believe that societal costs, consisting of marginal power supply costs (those that can be avoided or incurred by MH if retail sales change) and environmental costs (those that can be avoided or incurred in the power pool in which MH participates if MH retail sales change) should be recognized in the cost of service methodology. This is the thrust of my evidence in this proceeding.

Q. Have you used the MH Recommended Method, or the alternative treatment of distribution costs you prefer, as the base for your analysis in this proceeding?

I have use the MH Recommended Method as the base from which I have computed alternatives, not the study they prepared at my request using my preferred distribution cost classification. My purpose in testifying is to incorporate emission costs – CO_2 specifically – into the COSS, not to debate distribution cost allocation. Incorporation of environmental and social costs is an issue of economic efficiency and environmental benefit. The treatment of distribution costs is merely an equity issue among customer classes.

I have therefore relied on the basic results of the Recommended Method for treatment of all costs except those I have specifically added in my sensitivity studies. Those consist of CO_2 costs and the substitution of marginal generation costs for embedded generation costs.

Environmental Impact of Generation

Q. What is the key issue relating to the environmental impact of electric supply for MH customers?

A. Whenever MH customers consume electricity, they accomplish the following:

a) Increase their personal benefit from consuming electricity, whether this is a warmer or cooler home, a bigger refrigerator, a larger retail store, or increased industrial production.
b) Increase the retail revenue received by MH
c) Increase the cost incurred by MH to provide distribution service within Manitoba, including potential needs to invest in additional distribution system capacity;
d) Reduce the wholesale revenue received by MH from the export of surplus power; for the purpose of my analysis, I assume that any increase in usage in Manitoba reduces export sales and revenues. To the extent that the foregone wholesale revenue exceeds the retail revenue, rates in Manitoba must increase to cover the shortfall.
e) Increase the environmental impacts of generation in the states and provinces in which Manitoba exports its surplus power, some of which create environmental impacts in Manitoba and adjacent Canadian provinces.

In my opinion, the key environmental issue is the last of these – every kilowatt-hour consumed in Manitoba that could be conserved results in additional emissions from fossil-fired generating facilities. In a social sense, this is a "cost" of that consumption. In order to internalize that cost into the COSS, I propose that these costs be added to the energy costs reflected in the COSS in computing the class revenue to cost ratios for each customer class.

Q. What are the principal environmental impacts that result from underpricing electricity consumption in Manitoba relative to a full-costing approach that includes all societal costs?

A. MH retail consumers use more electricity, leading to lower exports by MH. As a result of lower exports, adjacent utilities burn more fossil fuel to produce electricity. The primary fuel in the adjacent systems is coal, meaning that the CO_2 emissions are very substantial when this occurs. In addition, there are emissions of sulfur dioxide, mercury, and other air pollutants, which I understand are particularly a concern to the east, in Ontario. Some of these emissions directly pass into Canadian airsheds, given the prevailing winds. The greenhouse gas emissions in particular contribute to predicted global climate change which affects Canada as a part of the global community.

Q. MH refused to respond to certain discovery requests from RCM/TREE and other parties. In your opinion is their objection always appropriate?

A. In several of their responses, I believe they have construed this proceeding too narrowly in their refusal to respond. In particular, questions from RCM/TREE, CAC/MSOS, and MKO were declined, and these data limitations preclude the MPUB from having the fullest possible record upon which to base decisions, particularly relating to environmental impacts and the conversion of diesel systems to network systems.

The short period between the response date for the second round of data requests and the due date for evidence effectively precluded a motion to compel these responses, and my evidence is necessarily less complete than it might otherwise be. This is particularly burdensome to those parties participating without the expense of Counsel.

I would note that MH did not decline to respond to questions from the PUB. I guess they know when to hold their fire.

Q. How did you estimate the environmental impact associated with reduced exports from the MH system?

A. In response to RCM/TREE/MH I-10(e) and RCM/TREE/MH II-30, MH confirmed that the marginal resources that surplus sales can displace are primarily coal-fired units during off-peak periods, and a mix of natural gas and coal-fired resources during peak periods.

I have roughly estimated the CO_2 emissions per kilowatt-hour, and applied prices to these emissions based on information provided by MH in response to RCM/TREE/MH I-9 (which I believe are reasonable). The range of possible costs is \$0/tonne to \$40/tonne.[1] Since \$0/tonne would not affect the results of the Recommended Method, I have simply presented the results of the Recommended Method, but have estimated the impact at \$10/tonne, \$20/tonne, and \$40/tonne on the Recommended Method.

Q. Have you considered emissions other than CO_2?

A. No. Sulfur dioxide emissions are the most significant of these, and I believe these costs are partly internalized through the market for SO2 credits that exists in the United States. Nitrogen Oxides and mercury emissions could create a meaningful additional cost, and they are expected to be regulated in the future, but I made the judgment that keeping this simple was of value. Because Manitoba and Canada are committed to CO_2 reductions, I thought that focusing on this would be appropriate.

Cap and trade systems mitigate externality costs, but as long as the cap is high enough to continue environmental or health damage only a portion of the costs are internalized. E.g. Kyoto markets geared to 5% global reduction of CO_2 internalize only a small portion of climate change costs.

Q. Does MH get credit for the reduced CO_2 emissions in adjacent states and provinces when it exports power?

A. It is my understanding that MH has received some credits related to its exports. In my opinion, Manitoba should be allowed to claim credit for reduced CO_2 emissions that occur on the systems of MH trading partners (both Canadian and US) when it exports power. If and when CO_2 emissions are monetized, this credit will become internalized and automatic, but until then I think it appropriate to at least recognize and quantify these benefits, and the COSS is one appropriate place to recognize these benefits.

Q. What method did you use to incorporate CO_2 costs into the MH Recommended Cost of Service Study?

A. I used a four-step process.

First, I estimated the percentage of generation during each time period that would come from coal, combined-cycle, and simple-cycle generation, based on information provided by MH and the Midwest ISO, and confirmed as to general accuracy by MH in response to RCM/TREE Data Request II-30.

Second, I calculated the tonnes of CO_2 per megawatt-hour for each type of power plant, based on information from the US Energy Information Administration and Pace University's Energy Program.[2] I then weighted this by the percentage of each type of

[1] Data response RCM/TREE/MH I-9 indicates a range of \$0/ton to \$31/ton (\$2004 USD). This has been converted to 2006 Canadian dollars per metric tonne, resulting in \$0 - \$40/tonne used in this testimony.

[2] http://www.seen.org/pages/db/method.shtml

plant, generating a $/MWh calculation for each time period, assuming $10/tonne for CO_2. These calculations are set forth in my Exhibit JL-2.

Third, I multiplied the consumption of each customer class in each time period by the cost for each time period. For the $20/tonne and $40/tonne estimates, I doubled and quadrupled the $10/tonne estimate of CO_2 costs. I added these costs to the costs as determined by the MH Recommended Method to generate a new "Total Cost With CO_2 Costs" at $10/tonne, $20/tonne, and $40/tonne for CO_2

Finally, I recomputed the Revenue to Cost Coverage ratios with these additional costs incorporated. I also indexed these to 100%, so that the relative cost coverage for each class at current rates can be seen.

The table below, taken from my Exhibit JL-3, shows the results of this analysis. I show the "raw" revenue to cost ratio, which does not include the application of export revenue to any class. This is the percent of total embedded costs plus CO_2 costs currently recovered by rates for each class. This generally shows that MH customers are paying about 80% of the embedded cost of service without consideration of CO_2 costs (as shown in the Company's Recommended Method), but this declines to 70%, 60%, and 50% if CO_2 costs are included at $10/tonne, $20/tonne, and $40/tonne.

The "indexed" result puts all of these on a basis similar to that presented by MH – with each class raw RCC expressed as a percentage of the system RCC. This allows for an easy comparison of the *relative* RCC of each class, but in terms of total coverage of costs with revenues, the first table is more appropriate to rely upon.

Raw Revenue to Cost Coverage Ratios

Class	MH Recommended Study $0/Tonne	$10/Tonne	$20/Tonne	$40/Tonne
Residential	75%	68%	63%	54%
General Service - Small Non-Demand	86%	77%	71%	60%
General Service - Small Demand	84%	74%	66%	55%
General Service - Medium	79%	69%	62%	51%
General Service - Large 0 - 30 kV	68%	60%	54%	44%
General Service - Large 30 - 100 kV	79%	68%	59%	47%
General Service - Large >100 kV	81%	68%	58%	45%
Area and Roadway Lighting	99%	96%	93%	87%

Indexed Revenue To Cost Coverage Ratios

Class	**MH Recommended Study $0/Tonne**	**$10/Tonne**	**$20/Tonne**	**$40/Tonne**
Residential	96%	98%	100%	103%
General Service - Small Non-Demand	110%	111%	113%	115%
General Service - Small Demand	107%	107%	106%	106%
General Service - Medium	101%	100%	99%	98%
General Service - Large 0 - 30 kV	88%	87%	86%	85%
General Service - Large 30 - 100 kV	102%	98%	95%	91%
General Service - Large >100 kV	103%	97%	93%	87%
Area and Roadway Lighting	127%	138%	148%	166%

Q. What is the net result of your recomputation of the Company's Recommended Method with avoidable CO_2 emissions incorporated?

A. This shows that all of the major classes are paying dramatically less than the cost of service , and that if CO_2 costs are included in the study, this declines even further. Basically, MH customers are getting service at a significant discount to the cost of that services. It also shows that the *relative* class revenue coverage changes significantly with the inclusion of CO_2 costs, because some classes use relatively more energy than others, and the time periods in which they use it are different.

Applying the Results of Including CO_2 Costs

Q. How do you recommend that the MPUB utilize this information?

A. There are many ways to use this information, and setting the level of retail rates is only one of them.

First, these approaches can be used to refine the COSS methodology to produce more accurate results for use in setting rates.

Second, the environmental costs can be applied in determining the cost-effectiveness of energy efficiency programs and initiatives.

Third, the combination of marginal costs by season, and environmental costs, can and should be used in the rate design process within classes, with the goal being to set the incremental price for every customer closer to the incremental cost that their usage causes.

Q. Should the MPUB use these marginal costs and environmental costs for setting rates for MH customers at this time?

A. No. If cost were the only consideration in ratemaking, and CO_2 costs were included in the COSS, but MH was limited to recovering its embedded revenue requirement, this would result in slightly lower rates for residential customers, and slightly higher rates for large-use general service customers. However, in my opinion, cost should be only one element of the MPUB decisions on cost allocation. Other factors, including perceptions of equity and fairness, impacts on the regional economy, and impacts on disadvantaged citizens are also legitimate regulatory considerations, and I do not make a recommendation on how these non-cost considerations should be applied.

Q. Should the environmental costs be collected as part of the MH revenue requirement?

A. This is a policy decision for the MPUB and the Government of Manitoba. I believe it would be economically efficient to do so – to recognize these elements of cost in setting rates for MH.

Q. If this were included in the revenue requirement, how should the revenues be utilized?

A. This also would be a policy decision for the MPUB and the Government of Manitoba. The funds could be used for any combination of purposes relating to energy efficiency and renewable resource development – or they could be used for general governmental purposes. One reasonable and limited approach would be to gradually phase in a CO_2 charge in the MH rate schedule, and apply the revenues to fund energy efficiency programs administered by MH. That would probably be within the role of the MPUB, and would replace funding from general class-specific revenues now used for that purpose. However, the funding would need to increase greatly to absorb the difference between the total cost of service and current rates.

Recognition of Marginal Costs

Q. Has MH identified marginal energy costs for the system, in addition to calculating embedded costs?

A. Yes. In response to CAC/MSOS/MH II-36, MH provided an estimate of the marginal cost of generation of $.0535/kWh. This is more than twice the average generation cost included in the PCOSS.[3] If I simply substitute this marginal cost of generation for the generation values in the Recommended Method, the class Revenue To Cost Coverage ratios drop dramatically. I computed this by increasing all of the allocated generation costs (which already reflect the marginal cost relationships by season and time period in the MH Recommended Method) by the ratio of marginal to embedded generation costs of 226%. The table below shows this result, both on an absolute and indexed basis, taken from my Exhibit JL-4. The classes as a whole are paying only about half of the cost of service, including marginal generation costs, and some are as low as 43%.

Effect of Substituting Marginal for Embedded Generation Costs

Class	RCC % At Current Rates	RCC % Indexed
Residential	53%	104%
General Service - Small Non-Demand	59%	115%
General Service - Small Demand	54%	105%
General Service - Medium	50%	97%
General Service - Large 0 - 30 kV	43%	83%
General Service - Large 30 - 100 kV	46%	90%
General Service - Large >100 kV	45%	87%
Area and Roadway Lighting	84%	164%

Q. What would be the effect of utilizing these marginal costs, instead of the embedded costs, in computing the results of the COSS?

A. The results are quite similar to the effect of adding the CO_2 costs to the Recommended Method. All of the major classes have significant deficiencies from cost.

[3] The average generation cost shown on Schedule B6 is about $.0236/kWh, for a ratio of 226% between marginal generation costs and embedded generation costs.

On an indexed basis, the General Service Large classes have a severe deficiency from cost.

Q. Are you recommending that the MPUB utilize these marginal costs in setting the revenue requirement and rates for MH?

A. This would be a policy decision for the MPUB and the Government of Manitoba. Doing so would enhance economic efficiency, as all classes would respect the marginal cost of the generation resources they require. It is certainly appropriate to use this information in the near-term to establish conservation program cost-effectiveness limits. It is also appropriate, as I discuss below, to take steps to recognize these incremental costs in the incremental rates applied to large new loads, such as a potential new electroprocess, chlor-alkali, or aluminum smelter.

Q. If rates were based on the COSS including marginal generation costs, would the revenues exceed the costs that are paid by MH to support its system?

A. Yes. There would be a surplus of approximately $700 million per year.

Q. Are you recommending that this be implemented, and if so, what do you recommend be done with the surplus revenue?

A. A decision to implement this would be a policy decision for the MPUB and the Government of Manitoba. As a practical matter, the first priority should be to invest in energy efficiency measures up to the marginal costs that could be displaced by doing so. The $700 million would be a very significant pool of funds for efficiency. However, the funds could also be used for other governmental purposes, including education, health care, job training, economic development and strategic tax reductions. From *an economic efficiency* perspective, a key goal would be to get prices equal to marginal costs to promote efficient consumption of energy. The use of the funds would be a policy-directed decision.

Combination of CO_2 Costs and Marginal Generation Costs

Q. Have you prepared an analysis that combines both of the adjustments you have prepared – including both CO_2 costs and marginal generation costs into the MH Recommended Method?

A. Yes. These results are developed in my Exhibit JL-5, and summarized in the table below.

MH Revenue to Cost Coverage Ratios Including $20/tonne CO_2 and Marginal Generation Costs

Class		RCC % At Current Revenues		Indexed RCC % At Current Rates
Residential		47%		106%
General Service - Small Non-Demand		51%		116%
General Service - Small Demand		46%		104%
General Service - Medium		43%		97%
General Service - Large 0 - 30 kV		36%		83%
General Service - Large 30 - 100 kV		39%		87%
General Service - Large >100 kV		37%		84%
Area and Roadway Lighting		79%		180%
Total		44%		100%

Q. How do these results compare to the results discussed earlier, considering CO_2 costs or marginal generation costs?

A. The results generally are similar, except that the deficiency from cost is even greater when both CO_2 costs and marginal generation costs are considered. The impact on the cost coverage of various classes is quite dramatic, with the General Service – Large 0 – 30 kV class declining to only 36% of the total cost of service. On a relative cost coverage basis, the large general service classes are well below average, and the secondary voltage classes somewhat above average, primarily because these adjustments do not affect distribution costs at all.

Q. In your opinion, which of the analyses you have provided best reflects the total societal costs of providing service to MH customers?

A. I believe that the last of these is the most accurate. First, it includes CO_2 costs at $20 (Canadian) per metric tonne, a value that I believe is reasonable. Second, it includes marginal energy costs, which are the real opportunity costs caused by consumption of power in Manitoba. It includes the allocation of the costs of providing export service to the export class, consistent with the MH Recommended Method. Finally, it excludes the net revenue from export, which is a benefit that Manitoba can enjoy, but it is not necessarily appropriate to distribute that benefit on the basis of utility power consumption (the previous method) or total utility costs (the proposed new method).

Q. What does the indexed RCC% for this final study indicate for Manitoba?

A. The indexed result is an indicator of the relative cost coverage of the various classes. It is a class parity ratio if you assume that all CO_2 costs, all net export revenues, and the entire premium of marginal cost over embedded generation cost are to be returned to MH electric consumers in proportion to their allocated utility costs. Basically, if the rates are only going to recover the embedded revenue requirement, but they are to reflect marginal costs and environmental costs, the Indexed RCC% in this final study should be used by the MPUB to define "parity."

Q. What is the total subsidy to MH consumers, compared with a full-costing approach as measured by this final study?

A. The final study shows that MH customers are paying about $1.0 billion per year for electric service, but receiving service with a value of $2.3 billion, for a total "subsidy" of $1.3 billion. That subsidy is spread across all classes, with about one-third received by residential consumers, one-third by small and medium general service customers, and one-third by large general service customers. The greatest relative subsidies go to the classes with the highest energy intensity, which are paying less than 40% of the total societal cost of service.

Elasticity

Q. Have you estimated the impact that would result if electricity prices for MH were set based on the marginal generation costs and environmental costs that you have calculated?

A. Yes. My Exhibit JL-6 shows the effect of implementing electric rates in Manitoba that recover the full cost of providing service – including marginal generation costs and CO2 costs. This exhibit shows that retail sales would likely decline by about 3 billion kilowatt-hours per year, and this, in turn, would bring an additional $170 million per year in export revenue to Manitoba.

In preparing this estimate, I assumed an "arc elasticity" of -0.25, a price response that is probably conservative given the prevalence of electroprocess industry in Manitoba. This level is well within the range of elasticities estimated by MH in its response to RCM/TREE/MH II-24b.

Q. You mention the presence of electroprocess industry in Manitoba. In your opinion, would failure to implement rates for new industries at levels that reflect marginal costs potentially lead to adverse impacts on the Manitoba economy?

A. Yes. Manitoba industrial rates are currently so low (an average of $.028/kWh for the 100 kv+ subclass) that Manitoba is likely to be a target of new electroprocess industry. If MH serves such customers, at its current rates, it is foregoing export revenue that averages about twice this amount. Given the departure of the aluminum smelting industry from many parts of North America (eight of ten plants in the Pacific Northwest, representing about 3,000 megawatts of electricity use, have closed in the past two decades), that industry is looking for places with low electric rates. Manitoba may be a dubious "winner" of this competition.

The result would be a loss of export revenue, and, under the current scheme, higher rates for all MH customers.

Q. Is there evidence that MH is already attracting energy-intensive industry?

A. Yes. MH large industrial load has grown much faster than its residential or commercial load. As MH responded in PUB/MH I-26, p. 5:

> *"While energy cost is a significant consideration for pipelines and forest operations, it is a much greater consideration for the electrochemical industry, which has increased its operations in Manitoba significantly since 1981, from 212 GWh to 1,456 GWh in 2003, an increase of nearly 600%. By comparison, over the same period, sales to pipelines increased 260%; sales to large industry overall increased by about 160%; sales to other General Service customers increased by about 60% and Residential sales increased by 41%.."*

Even sales of 1,456 GWh, however, pales in comparison to a typical new aluminum smelter. The two newest smelters I am aware of, in Maputo, Mozambique (where I assisted a new regulatory commission develop a business plan), and in Bahrain, exceed 500 megawatts of demand – on the order of 4,000 GWh annually. While pipelines would probably pay the marginal cost of power supply, and if they do so MH should not need to discourage them, electroprocess industry will not – it shops the world for cheap hydropower.

Q. Have you estimated how the lost export revenue would compare to the increased payroll of such an industry in Manitoba?

Yes. My Exhibit JL-6, Page 2 shows this estimate. It shows that MH customers would suffer a rate increase of about $106 million per year, and that the Manitoba economy would suffer a net loss of about $66 million per year (after considering the payroll of a new aluminum smelter.)

Q. Have other utilities established incremental cost pricing for large new customers?

A. Yes. The more common method is in utility systems with excess capacity, so-called "economic development" rates were established, offering large new industrial customers incremental (below-embedded) prices for new loads. These were common during the power surpluses of the 1980s in many regions. Less common have been incremental rates for large new customers at higher rates, but there are some clear examples. The U.S. Congress directed that the Bonneville Power Administration serve new industrial loads in excess of 10 megawatts in any year at a "new resources" rate. BC Hydro has been implementing a "vintage rate" program to reflect incremental costs for incremental loads.

Summary

Q. Please summarize your evidence in this proceeding.

A. I have prepared and presented studies that take the MH Recommended Method, and apply distinct modifications to them. These modifications include:

1) Classification of the distribution infrastructure as demand-related, not customer and demand-related;
2) Incorporation of CO_2 Opportunity Costs of $10, $20, and $40/tonne into the Recommended Method.
3) Substitution of Marginal Generation Costs into the Recommended Method.
4) Incorporation of <u>both</u> CO_2 Opportunity Costs <u>and</u> Marginal Generation Costs into the Recommended Method.

All of these have similar effects on the results of the studies with respect to relative cost coverage of the classes – they show that the residential class is providing a relatively larger share of revenue than is shown in the Recommended Method.

The latter two approaches, incorporating either CO_2 costs or Marginal Generation Costs shows that all classes are falling far short of the opportunity costs they impose, but that the large general service classes have the greatest deficiencies.

Q. How do you recommend the MPUB utilize these results in this proceeding?

A. I recommend that the MPUB direct MH in the future to present cost of service studies that include both environmental opportunity costs and marginal generation costs in addition to the embedded costs of providing electricity service. Under a regime of full-cost accounting, it is desirable for all of the participants to be aware of the full costs that their consumption imposes. MH has begun this process, by recognizing that without export revenues, Manitoba customers are paying only about 78% of their cost of service. My analysis shows that when CO_2 costs and marginal energy costs are included, this drops below 50%. Manitoba electric consumers are receiving an extraordinary value from MH, and it is appropriate to recognize the societal subsidy involved.

These could be required as the primary approach to measuring cost of service, or as sensitivity analyses on the basic studies submitted. I believe it is important to know the impact that each class has on the system, and these analyses provide valuable information in this regard.

The MPUB could immediately use the information for determining rate allocation between classes and rate design within classes. It could use the information for determining the cost-effectiveness thresholds for energy efficiency programs. It may have the authority to allow a portion of the additional revenues to be used for specific programs, such as low-income energy assistance.

The MPUB and the Government of Manitoba would need to make a policy decision about whether to begin reflecting either CO_2 costs or marginal generation costs into the revenue requirement and rates of MH, and raising the revenue requirement above the level of current embedded costs. If they determine this is appropriate to encourage economic efficiency, a decision would be required on how to invest the proceeds for the benefit of Manitoba. Obviously the Government of Manitoba made exactly such a determination in declaring the 2002/03 dividend.

Q. What is the principal problem with the current system – assigning net export revenues to offset the domestic cost of service?

A. Under the current system if export prices rise due to an increase in the value of electricity, domestic prices would fall as those revenues are used to reduce domestic electricity rates. This would lead to increased domestic usage, decreased exports, and decreased Provincial income from export markets.

Currently, MH estimates that domestic rates cover only about 78% of the embedded cost of providing electricity service. My exhibits show that MH domestic rates cover less than 50% of the total cost of providing domestic electricity service when CO2 costs and marginal generation costs are considered. This leads to inefficient levels of electricity consumption, inefficient allocation of resources, diminished export revenue, a weaker Manitoba economy, and greater environmental damage than would occur under a full-costing scenario.

Q. In your opinion is it pragmatic to increase MH domestic rates immediately to the level suggested by a full-costing methodology?

A. Definitely not. That would require approximately a doubling of electricity prices (offset by equivalent cuts in other taxes and consumer costs and improved services). This could create severe dislocation for households and businesses which have made significant investment decisions based on the status quo of low electricity prices.

A pragmatic approach would be to plan gradual movement toward full-costing, with application of the revenues to fund energy efficiency programs and other societal benefits funded by MH. I believe those changes would be within the authority of the MPUB.

In addition, the Government of Manitoba might make a reasonable decision to begin moving MH domestic rates towards full cost, and use the revenue to provide needed services and/or reduce other taxes. In the narrowest sense – using 100% of the increased electricity revenues to reduce other taxes -- this would improve economic and environmental efficiency while keeping 100% of this revenue within the Manitoba economy. For example, reducing general taxes to offset higher electricity rates would lead to lower global environmental impacts, a significant net increase in Manitoba wealth, while collecting the same total amount in combined rates and taxes) However, because there are some energy-intensive businesses in Manitoba that would see energy cost increases that are greater than their offsetting tax decreases, such a program would need to be implemented carefully to avoid unacceptable short-run impacts. Most existing energy-intensive industries in Manitoba process raw materials that are local in origin, and have economic benefits that spin off in a way that an aluminum smelter, that might come to Manitoba solely for low-cost electricity, would not.

Q. Does this complete your prepared testimony?

A. Yes.

Jim Lazar   Consulting Economist   Microdesign Northwest

Jim Lazar is a consulting economist specializing in utility rate and resource analysis. In more than seventy appearances before regulatory bodies in the United States and abroad, he has provided expert assistance in the areas of revenue requirement, cost of capital, formation of new publicly owned utility systems, electric and gas utility integrated resource planning, cost of service and rate design, least cost and integrated resource planning, the appropriate regulatory treatment of excess capacity, subsidiary profits, and regulatory treatment of real estate transactions.

Technical Assistance: Jim Lazar has provided technical assistance to local, state, and federal public agencies, public interest groups, industry trade groups, and electric utilities. Expert testimony has been presented before the state regulatory commissions of Washington, Idaho, Montana, California, Hawaii, Illinois, Oregon, and Arizona, and before the Federal Energy Regulatory Commission, Nuclear Regulatory Commission, Economic Regulatory Administration, Bonneville Power Administration, California Energy Commission, British Columbia Utilities Commission, Manitoba Public Utilities Board and numerous local regulatory agencies. Internationally, Mr. Lazar has assisted clients in New Zealand, Ireland, Mauritius, Mozambique, Namibia, and Canada with utility rate and resource analysis.

Training: Jim Lazar has taught Energy Economics as a member of the faculty of Edmonds Community College, and previously served as a faculty member to the Western Consumer Utility Training Center in 1982. He was the lead author of a book on utility rate and resource issues, The People's Power Guide, published in 1982, and a handbook on electric utility cost of service analysis prepared for the Arizona Corporation Commission in 1993. He has presented papers at numerous conferences in the United States, as well as Canada, New Zealand, and Austria, and has taught courses utility resource and regulatory principles in The Philippines, India, China, Indonesia, Brazil, and for the regulatory Commission of Kyrgyzstan..

EDUCATION:

University of California, Los Angeles		
Shimer College, Mt. Carroll, Illinois		
Western Washington University, Bellingham B.A. 1974		(Economics)
Graduate work:	Western Washington University	(Economics)
	University of Washington	(Public Administration)

EMPLOYMENT HISTORY

1979 to Present

Self-employed consulting economist, and community college faculty: Transportation studies; Utility rate and resource analysis, conservation program design and evaluation, transportation system analysis. Associate with the Regulatory Assistance Project since 1999.

1983-84

Research Director, Northwest Energy Coalition: Directed studies on energy resource cost-effectiveness, including nuclear, conservation, building codes, and unconventional resources;

1982

Research Associate, Metropolitan Development Council of Tacoma, Washington: Research Director, People's Organization for Washington Energy Resources

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PUBLICATIONS AND RESEARCH [Excluding Regulatory Proceeding Testimony]

Mauritius Regulatory Technical Assistance Definitional Mission Report, prepared for the U.S. Trade Development Authority, Regulatory Assistance Project, 2005

Hawaii Energy Utility Regulation And Taxation, prepared for Hawaii Energy Policy Project in conjunction with J. Carl Freedman, 2003

Power Market Restructuring Issues: Integrated Monopoly → Single Buyer → Wholesale Market, prepared for the Electricity Control Board of Namibia in conjunction with Nexant Corporation / U.S. Agency for International Development, 2003

History, Current Status, and Future of the Residential Exchange, Snohomish Public Utility District, 2003

Tools Available to BPA and WAPA to Develop Renewables, Western States Renewable Energy Summit, Reno, Nevada, 2003

The Role of Regulation, and Starting and Staffing a Regulatory Commission, prepared for the Central Electricity Commission of Mozambique in conjunction with Nexant Corporation / U.S. Agency for International Development, 2003

Low-Income and Rural Electrification Assistance Programs for the Indonesia Social Electricity Development Fund, Prepared for the Institute of International Education / U.S. Agency for International Development, 2002

Convergence: Electricity and Natural Gas in Washington State, Prepared for Washington State Office of Trade and Economic Development, 2001 (One of seven authors)

Improving State Electricity Taxation, Prepared for Regulatory Assistance Project, 2001 (with Cheryl Harrington)

Lessons Learned from the California Energy Crisis: Prepared for Regulatory Assistance Project / Energy Foundation China Sustainable Energy Program, 2001

Consumer Protection and Customer Service in Emerging Utility Industry Structures: Prepared for Regulatory Assistance Project (Brazil) / USAID, 2000

Electric Cost of Service Analysis: Prepared for City of Burbank, California Public Service Department, 2000

Tariff Analysis in a Regulatory Regime: Prepared for Administrative Staff College of India / USAID, 1999

Energy Efficiency Promotion Policies: Prepared for Administrative Staff College of India / USAID, 1999

Demand Side Management in a Regulatory Environment: Prepared for Institute of Financial Management and Research (Madras, India) / USAID, 1999

Consumer Advocacy in a Restructured Electric Utility Industry: Prepared for Administrative Staff College of India / USAID, 1999

Private Energy Utilities and Bellevue's Options for the Future: Prepared for City of Bellevue, Washington, 1998

Energy Sector Regulation Principles and Practice: Prepared for Philippines Department of Energy / USAID, 1997

Electric Rate Unbundling for a Competitive Market: Prepared for Washington Water Power Company / Idaho PUC, 1997

Retail Wheeling Pilot Proposal, Puget Sound Power and Light Company, Office of the Attorney General, State of Washington 1996

Conservco: An Option for Achieving Efficiency in a Competitive Utility Market Structure, Prepared for the Snohomish County Public Utility District, 1995

Making Integrated Resource Planning Better and Cheaper, British Columbia Energy Coalition, 1995

Cost Elements and Study Organization For Embedded Cost of Service Analysis, Briefing Paper to Arizona Corporation Commission, (Arizona Corporation Commission, July, 1992)
Transmission and Distribution Cost Allocation in Embedded Cost of Service Analysis, Briefing Paper to Arizona Corporation Commission, (Arizona Corporation Commission, July, 1992)

Production Cost Allocation in Embedded Cost of Service Analysis, Briefing Paper to Arizona Corporation Commission, (Arizona Corporation Commission, July, 1992)
Utility Connection Charges and Credits: Stepping Up the Rate of Energy Efficiency Implementation, (Second International Conference on Energy Consulting, Graz, Austria, 1991)

Electric Power Resource Evaluation for Improved Fish Migration, (Pacific States Marine Fisheries Commission, 1991)

Long-Term Financial Model Review: Prepared for Emerald People's Utility District, 1991

Unrecovered Costs of Serving New Residential Space Heat Loads, (Mason PUD #3, June, 1990)

Direct Use of Natural Gas for Residential Space and Water Heat Compared to Gas-Fired Electric Generation for Hydro-firming; Thermodynamic, Economic, and Environmental Impacts, (Association of Northwest Gas Utilities, 1990)

Model Energy Conservation and Power Planning Action Plan, (Northwest Conservation Act Coalition, 1990)

Ten Year Financial Plan Analysis for Startup, Oregon Trail Electric Cooperative, 1988

Impact of Operation of the Columbia Basin Irrigation Project on Northwest Electric Power Users, 1954-1986; (Natural Resources Defense Council, 1987)

WPPSS Preservation Costs and the BPA Residential and Small Farm Exchange (Mason County PUD, 1986)

WPPSS Nuclear Plants #1 and #3 in a Rapidly Changing Environment, (Snohomish County PUD, 1986)

WPPSS #1 and #3: Costs and Alternatives, (Northwest Conservation Act Coalition, 1984)

Do or Die: The Seabrook Nuclear Generating Station and the Public Service Company of New Hampshire, (Campaign for Ratepayer Rights, 1984)

Should Utility Conservation Efforts Continue During a Surplus, (Pacific Northwest Regional Economic Conference, 1984)

WPPSS Nuclear Plant #3: Where Now?, (Northwest Conservation Act Coalition, 1983)

A Ratepayer Perspective on Avoided Cost Pricing Under PURPA Section 210, (California Energy Commission, 1982)

The People's Power Guide: A Manual of Electric Utility Policies for Consumer Activists, (People's Organization for Washington Energy Resources, 1982)

Model Conservation and Electric Power Plan for the Pacific Northwest, (Northwest Conservation Act Coalition, 1982)

Electricity Market Decontrol through Windfall Profits Taxation and Competitive Power Supply Contracting, (PNW Regional Economic Conference, 1982)

Northwest Electric Load Shaping for Fish Enhancement, (Romer Associates/National Marine Fisheries Service, 1981)

Conserving Electricity in the Pacific Northwest, (Pacific Northwest Regional Economic Conference, 1980)

JIM LAZAR   CONSULTING ECONOMIST
RECENT CONSULTING CLIENTS [PARTIAL LISTING]

UTILITIES AND UTILITY ASSOCIATIONS

City of Burbank, California
Emerald People's Utility District [Eugene, OR]
Hawaiian Electric Company
Mason County Public Utility District #3 [Shelton, WA]
Salem Electric Cooperative [Salem, OR]
Snohomish County Public Utility District [Everett, WA]
Northwest Gas Association [Portland, OR]

PUBLIC AGENCIES

Arizona Corporation Commission
City of Bellevue, Washington
Environmental Protection Agency
Hawaii Department of Commerce and Consumer Affairs
Idaho Public Utilities Commission
Mount Rainier National Park
National Marine Fisheries Service
Office of the Attorney General, Washington
Pacific States Marine Fisheries Commission
Research Corporation of the University of Hawaii
Washington State Department of Community, Trade, and Economic Development
Washington State Department of Wildlife
Washington Utilities and Transportation Commission

NONPROFIT ENTITIES

Association for the Advancement of Sustainable Energy Policy (Canada)
British Columbia Energy Coalition (Canada)
Citizen’s Utility Board, (Illinois)
Columbia River Intertribal Fish Commission
EnergyWatch (New Zealand)
Institute of International Education
Montana Electricity Buying Cooperative
Natural Resources Defense Council
Nez Perce Indian Nation
Northwest Conservation Act Coalition
Regulatory Assistance Project
Squamish Indian Nation (Canada)
Time to Respect Earth’s Ecosystems (Canada)
Yakima Indian Nation

EXPERT TESTIMONY AND ENERGY/UTILITY RESEARCH BY JIM LAZAR

YEAR	ORG	FORUM	CASE #	TOPIC/TITLE
1979	SKAG	NRC		Alternatives to Skagit Nuclear Plant
1979	PGN	OPUC	UF-3518	Review Increase Rate of Return
1979	PSD	WUTC	U-79-70	Insulation Stds, Conservation Loan Prog Industry
1979	PSD	NRC		Relocation of Skagit Plant
1979		WPPSS		Critique of WPPSS Bond Statements
1979		SENATE		"Summary Data on Petrol Supply Demand & Price"
1980	PSD	WUTC	U-80-10	Resource Alternatives, Error in Water Study Rate Study
1980	PSD	WUTC	U-78-05	Rate Analysis and Service Fees
1980	IPC	IPUC		Conservation Based Hook-up Charges
1981		GRAY		Review of PURPA Rate Making Standards
1981		SCL		"Giving Your Customers What They Want--And Need"
1981	WPPSS			Senate Report: Total Costs WNP's 1 Through 5
1981	WWP	IPUC	U-1008-155	Review WNP & Skagit as Relates to WWP
1982	CEC	CEC	OII-2	Recommendations and Conclusion on PURPA
1982	CEC	CEC	OII-2	Ratepayer View on Avoided Cost (PURPA)
1982	WWP	WUTC	U-82-10	Review WWP Costs Study
1982	BPA	BPA		Low Density Discounts
1983	MTP	MPSC	83.9.67	Cost Effectiveness of Colstrip 3 to Ratepayer
1983	PPW	WUTC	U-83-57	Colstrip & PP&L Review Blk Hills Colstrip Cost Exhibit
1983	PSD	WUTC	U-83-54	Review Rate Design
1983	WPPSS		394	Draft Cost Effectiveness Study of WNP 2&3
1983	WPPSS			WNP3 Cost of Completion & Operation to NCAC
1983	WPPSS			“WNP 3, Where Now?"
1983	WWP	WUTC	U-83-26	Cost of Colstrip 4, WWP Rate of Return, AFUDC, Power Supply Costs
1983	WWP	IPUC	U-1008-204	WNP3 Cost
1983	WWP	IPUC	U-1008-185	Review Colstrip 3&4 Costs, Rate of Return on WNP 3, Power Supply Costs
1984	PSD	WUTC	U-84-27/44	CWIP
1984	PSD	WUTC	U-84-61	Review Secondary Power Purchases & Sales
1984	WPPSS	NCAC		WNP 1&3 Cost Alternatives
1984	WWP	WUTC	U-84-28	Power Supply Costs, Lobbying Costs, Kettle Falls Rates
1985	PGN	OPUC	UE-44	Rate Design For Residential Users
1985	WWP	IPUC	U-1008-204	WNP3 Cost Rebuttal
1985	WWP	WUTC	U-85-36	Cost of Service Analysis, Rebuttal to Schoenbeck
1986	AZP	ACC	U134585156	Cost of Service, Rate Design, Load/Resource Balance
1986	CGC	WUTC	U-86-100	Revenue Requirements, Cost of Service
1986	PGN	OPUC	UE-48	WPPSS Investments, Property Transfers
1986	PPW	WUTC	U-86-02	Skagit, Pebble Springs, Cost of Service, Rate Design
1986	PSD	WUTC	U-85-53	Conservation Program Cost of Service/Rate Design
1986	SNO	SNOPUD		WNP 1 & 3 In A Rapidly changing environment"
1986	WECO	WUTC	U-86-117	Cost of Service, Rate Design
1986	WPPSS			Power Cost of WNP 2
1986	WWP	IPUC	U-1008-204	Surrebuttal
1987	AZP	ACC	U-1345-85367	Review AZP Cost of Service & Rate Design
1987	PSD	WUTC	U-86-131	BPA Settlement Exchange Agreement
1987	PSD	WUTC	U-87-1262	ECAC
1987	NIGAS	ICC	87-0032	Cost of Service
1987	SALEM	SALEM		Cost of Service/Rate Design
1987	WDW	9TH	86-7704	Cost Effectiveness of Third AC Intertie
1988	PP&L	WUTC	U-87-1513	Residential Rate Design
1988	CWE	ICC	87-0427	Cost of Service/Rate Design
1988	WWP	WUTC	87-1532-T	Gas Transportation Rates
1988	WWP	WUTC	88-2380-T	Natural Gas General Rate Increase
1988	IP	ICC	87-0695	Cost of Service/Rate Design
1988	SALEM	SALEM		Large Industrial Rate Study
1988	WWP	WUTC	88-2363-P	Power Cost Adjustment
1988	PUGET	WUTC	88-2010-T	Energy Cost Adjustment
1989	MASON	MASON		Service Extension Policy Analysis
1989	PUGET	WUTC	81-41-RE	Energy Cost Adjustment Reopening
1989	PUGET	WUTC	89-2862-T	Energy Cost Adjustment
1989	PUGET	WUTC	89-2688-T	General Rate Increase - WPPSS #3 - Cost of Service/Rate Design
1989	WWP	WUTC	U-89-3105-T	Interstate Cost Allocation/Excess Capacity

EXPERT TESTIMONY AND ENERGY/UTILITY RESEARCH BY JIM LAZAR

YEAR	ORG	FORUM	CASE #	TOPIC/TITLE
1990	WWP	WUTC	UG-900190	General Rate Increase - Cost of Service/Rate Design
1990	IP	ICC	90-0072	General Rate Increase - Cost of Service/Rate Design
1990	WECO	WUTC	UG-900210	Gas Transportation Rates
1991	PUGET	WUTC	UE-910689	Least Cost Planning Performance
1991	WPPSS	MASON		WNP 2 Revenues & Cost of Power
1991	WPPSS	MASON		WNP 1&3 Issues & Concerns
1991	PUGET	WUTC	UE-901183	Decoupling; Power Supply Cost Recovery
1991	GRANT	FERC	E-9569	Cost Impact of Fish Bypass Systems
1991	AZP	ACC	U-1345-90007	Cost of Service/Rate Design
1992	HECO	HPUC	6998	Cost of Service/Rate Design
1992	HELCO	HPUC	6999	Cost of Service/Rate Design
1992	KE	HPUC	7003	Cost of Service/Rate Design
1992	CGC	WUTC	UG-920062	Gas Tracker
1992	PSD	WUTC	UE-920630	Periodic Rate Adjustment Mechanism
1993	PSD	WUTC	UE-920499	Cost of Service / Rate Design
1993	HECO	HPUC	7310	Avoided Costs of Generation
1993	BPA	BPA	WP-93	Rate Design
1994	BCG	BCUC	IRP	Integrated Resource Planning / Decoupling
1994	WNG	WUTC	UG-931405	Gas Revenue Requirements
1995	BCEC	BCUC		Electric Utility Industry Structure
1995	MECO	HPUC	94-0345	Cost Allocation / Rate Design
1995	GASCO	HPUC	94-0307	Gas Supply; Cost of Service; Rate Design
1996	MECO	HPUC	96-0040	Cost Allocation / Rate Design
1996	BCG	BCUC		Shareholder Incentives
1996	PSD	WUTC	UE-960299	Special Contract
1996	PSD	WUTC	UE-960195	Merger, Puget Sound Power and Light / Washington Natural GAs
1997	BCG	BCUC		Southern Crossing Pipeline Economics
1998	MECO	HPUC	97-0346	Cost of Service and Rate Design
1999	PSD	WUTC	UE-990267	Colstrip Sale and Accounting Treatment
1999	WPPSS	EFSEC		WNP-4 Site Restoration Options
1999	PSD/WWP/PPL		UE-991255	Centralia Sale and Accounting Treatment
2000	Avista	WUTC	UE-991606	Revenue Requirement; Rate Spread; Rate Design
2000	NWNG	WUTC	UG-000073	Revenue Requirement; Rate Spread; Rate Design
2000	Sumas	EFSEC	99-01	Recommendations on Site Certification Application
2000	PSE	WUTC	UE-001952	Industrial Market-Based Rates
2001	Sumas	EFSEC	99-01	Recommendations on Revised Application
2002	PSE	WUTC	UE-011411	Merger Compliance Rate Filing
2002	PSE	WUTC	UE-011570	General Rate Proceeding
2002	MH	MPUB		Residential Rate Design
2004	MH	MPUB		Cost of Service and Rate Design
2004	SCE	CPUC	A.02.04.056	Alternatives to Mohave Coal Plant
2005	WWP	WUTC	UE-050482	Cost Allocation and Rate Design
2005	PPW	WUTC	UE-050684	Decoupling, Cost Allocation and Rate Design

ACRONYMS

ACC	ARIZONA CORPORATION COMMISSION
ANGU	ASSOCIATION OF NORTHWEST GAS UTILITIES
AZP	ARIZONA PUBLIC SERVICE COMPANY
BCEC	British Columbia Energy Coalition
BCG	BRITISH COLUMBIA GAS UTILITIES LTD.
BCUC	BRITISH COLUMBIA UTILITIES COMMISSION
BEL	City of Bellevue, Washington
BPA	BONNEVILLE POWER ADMINISTRATION
CBFWA	COLUMBIA BASIN FISH AND WILDLIFE AUTHORITY
CPUC	CALIFORNIA PUBLIC UTILITIES COMMISSION
GRANT	GRANT COUNTY PUBLIC UTILITY DISTRICT
GRAY	GRAYS HARBOR PUBLIC UTILITY DISTRICT
HECO	HAWAIIAN ELECTRIC COMPANY
HELCO	HAWAII ELECTRIC LIGHT COMPANY
HPUC	HAWAII PUBLIC UTILITY COMMISSION
ICC	ILLINOIS COMMERCE COMMISSION
IP	ILLINOIS POWER COMPANY
IPUC	IDAHO PUBLIC UTILITIES COMMISSION
KE	KAUAI ELECTRIC
MASON	PUBLIC UTILITY DISTRICT #3 OF MASON COUNTY, WASHINGTON
MPUB	MANITOBA PUBLIC UTILITIES BOARD
MTP	MONTANA POWER COMPANY
NIGAS	NORTHERN ILLINOIS GAS COMPANY
NMFS	NATIONAL MARINE FISHERIES SERVICE
NRC	ATOMIC SAFETY AND LICENSING BOARD/NUCLEAR REGULATORY COMMISSION
OPUC	PUBLIC UTILITY COMMISSION OF OREGON
PGN	PORTLAND GENERAL ELECTRIC COMPANY
PPW	PACIFIC POWER AND LIGHT COMPANY
PSD	PUGET SOUND POWER AND LIGHT COMPANY
PSE	PUGET SOUND ENERGY
SALEM	SALEM ELECTRIC COOPERATIVE
SAUDER	SAUDER INDUSTRIES, LTD. [CANADA]
SCE	SOUTHERN CALIFORNIA EDISON
SCL	SEATTLE CITY LIGHT
SENATE	WASHINGTON STATE SENATE
SNOPUD	SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT
Sumas	Sumas Energy Corporation
THERM	THERMAL REDUCTION, INC.
TRAILS	OREGON TRAILS ELECTRIC COOPERATIVE
TRIBE	COLUMBIA RIVER INTERTRIBAL FISH COMMISSION
WDW	WASHINGTON DEPARTMENT OF WILDLIFE
WECO	WASHINGTON NATURAL GAS COMPANY
WPPSS	WASHINGTON PUBLIC POWER SUPPLY SYSTEM
WUTC	WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION
WWP	WASHINGTON WATER POWER COMPANY / AVISTA UTILITIES

NOTE: LIST DOES NOT INCLUDE LITIGATION ASSISTANCE

Exhibit of Jim Lazar
Exhibit JL-2
Page 1

TOU Billing Determinants by Class

	Winter Off-Peak	Winter On-Peak	Summer Off-Peak	Summer On-Peak	Total
Residential	2,435,982,859	2,195,343,308	1,363,709,294	1,433,096,830	7,428,132,291
General Service - Small Non-Demand	503,523,504	527,717,792	355,144,409	440,454,087	1,826,839,792
General Service - Small Demand	535,890,644	560,679,463	397,837,325	457,237,233	1,951,644,665
General Service - Medium	849,502,461	918,424,284	714,981,331	859,031,261	3,341,939,337
General Service - Large 0 - 30 kV	398,490,271	450,051,564	378,798,936	443,457,805	1,670,798,576
General Service - Large 30 - 100 kV	240,097,279	202,073,039	225,601,513	189,885,594	857,657,425
General Service - Large >100 kV	1,599,044,204	1,361,658,554	1,470,513,932	1,230,045,997	5,661,262,687
Area and Roadway Lighting	45,925,837	19,032,914	33,402,325	13,842,831	112,203,907
Total General Customers					22,850,478,680
Exports	1,125,390,000	2,074,632,000	3,366,384,000	3,219,594,000	9,786,000,000
Total					32,636,478,680

Opportunity Emissions by Rate Period

Resources by Time Period Estimated from RCM/TREE/MH I-10(e) confirmed by RCM/TREE/MH II-30

	% of Generation	Lb CO2 per kWh	Tonnes / MWh	$/MWh @ $10/Tonne
Summer				
Off-Peak				
Coal	90%	2	0.89	$ 8.93
Combined Cycle Gas	10%	0.7	0.31	$ 3.13
Weighted Average:				**$ 8.35**
On-Peak				
Simple Cycle Gas	67%	1	0.45	$ 4.46
Combined Cycle Gas	33%	0.7	0.31	$ 3.13
Weighted Average:				**$ 4.02**
Winter				
Off-Peak				
Coal	98%	2	0.89	$ 8.93
Combined Cycle Gas	2%	0.7	0.31	$ 3.13
Weighted Average:				**$ 8.81**
On-Peak				
High-Cost Coal	50%	2.2	0.98	$ 9.82
Combined Cycle Gas	50%	0.7	0.31	$ 3.13
Weighted Average:				**$ 6.47**

Emission Costs @ $10/Tonne

	Winter Off-Peak		Winter On-Peak		Summer Off-Peak		Summer On-Peak		Total
Residential	$ 21,467,099		$ 14,210,928		$ 11,963,799		$ 5,764,376		$ 53,406,202
General Service - Small Non-Demand	$ 4,437,301		$ 3,416,030		$ 3,677,005		$ 1,771,648		$ 13,301,984
General Service - Small Demand	$ 4,722,536		$ 3,629,398		$ 3,817,114		$ 1,839,155		$ 14,008,204
General Service - Medium	$ 7,486,240		$ 5,945,157		$ 7,171,377		$ 3,455,300		$ 24,058,075
General Service - Large 0 - 30 kV	$ 3,511,696		$ 2,913,280		$ 3,702,081		$ 1,783,730		$ 11,910,786
General Service - Large 30 - 100 kV	$ 2,115,857		$ 1,308,062		$ 1,585,206		$ 763,781		$ 5,772,906
General Service - Large >100 kV	$ 14,091,577		$ 8,814,308		$ 10,268,688		$ 4,947,640		$ 38,122,213
Area and Roadway Lighting	$ 404,721		$ 123,204		$ 115,563		$ 55,680		$ 699,169
Total General Customers									161,279,539

MH Recommended Method With $10/Tonne CO2

Class	Total Cost w/o CO2	CO2 Cost @ $10/Tonne	Total Cost With CO2	Total Revenue Without Export	RCC Ratio	Indexed RCC Ratio
Residential	$ 551,984	$ 53,406	$ 605,390	$ 413,604	68%	98.3%
General Service - Small Non-Demand	$ 125,289	$ 13,302	$ 138,591	$ 107,252	77%	111.3%
General Service - Small Demand	$ 108,664	$ 14,008	$ 122,672	$ 90,862	74%	106.6%
General Service - Medium	$ 177,563	$ 24,058	$ 201,621	$ 139,754	69%	99.7%
General Service - Large 0 - 30 kV	$ 86,311	$ 11,911	$ 98,222	$ 59,106	60%	86.6%
General Service - Large 30 - 100 kV	$ 33,976	$ 5,773	$ 39,749	$ 26,974	68%	97.6%
General Service - Large >100 kV	$ 196,761	$ 38,122	$ 234,883	$ 158,829	68%	97.3%
Area and Roadway Lighting	$ 19,450	$ 699	$ 20,149	$ 19,297	96%	137.8%
Total General Customers	$ 1,299,996	$ 161,280	$ 1,461,276	$ 1,015,677	70%	100.0%

MH Recommended Method With $20/Tonne CO2

Class	Total Cost w/o CO2	CO2 Cost @ $20/Tonne	Total Cost With CO2	Total Revenue Without Export	RCC Ratio	Indexed RCC Ratio
Residential	$ 551,984	$ 106,812	$ 658,796	$ 413,604	63%	100.3%
General Service - Small Non-Demand	$ 125,289	$ 26,604	$ 151,893	$ 107,252	71%	112.8%
General Service - Small Demand	$ 108,664	$ 28,016	$ 136,680	$ 90,862	66%	106.2%
General Service - Medium	$ 177,563	$ 48,116	$ 225,680	$ 139,754	62%	98.9%
General Service - Large 0 - 30 kV	$ 86,311	$ 23,822	$ 110,133	$ 59,106	54%	85.7%
General Service - Large 30 - 100 kV	$ 33,976	$ 11,546	$ 45,522	$ 26,974	59%	94.7%
General Service - Large >100 kV	$ 196,761	$ 76,244	$ 273,005	$ 158,829	58%	92.9%
Area and Roadway Lighting	$ 19,450	$ 1,398	$ 20,848	$ 19,297	93%	147.9%
Total General Customers	$ 1,299,996	$ 322,559	$ 1,622,555	$ 1,015,677	63%	100.0%

MH Recommended Method With $40/Tonne CO2

Class	Total Cost w/o CO2	CO2 Cost @ $40/Tonne	Total Cost With CO2	Total Revenue Without Export	RCC Ratio	Indexed RCC Ratio
Residential	$ 551,984	$ 213,625	$ 765,608	$ 413,604	54%	103.5%
General Service - Small Non-Demand	$ 125,289	$ 53,208	$ 178,497	$ 107,252	60%	115.1%
General Service - Small Demand	$ 108,664	$ 56,033	$ 164,696	$ 90,862	55%	105.7%
General Service - Medium	$ 177,563	$ 96,232	$ 273,796	$ 139,754	51%	97.8%
General Service - Large 0 - 30 kV	$ 86,311	$ 47,643	$ 133,954	$ 59,106	44%	84.5%
General Service - Large 30 - 100 kV	$ 33,976	$ 23,092	$ 57,068	$ 26,974	47%	90.5%
General Service - Large >100 kV	$ 196,761	$ 152,489	$ 349,249	$ 158,829	45%	87.1%
Area and Roadway Lighting	$ 19,450	$ 2,797	$ 22,246	$ 19,297	87%	166.1%
Total General Customers	$ 1,299,996	$ 645,118	$ 1,945,115	$ 1,015,677	52%	100.0%

Manitoba Hydro Revenue to Cost Coverage Ratio
At Alternative CO2 Values

Raw Revenue to Cost Coverage Ratios

Class	MH Recommended Study $0/Tonne	$10/Tonne	$20/Tonne	$40/Tonne
Residential	75%	68%	63%	54%
General Service - Small Non-Demand	86%	77%	71%	60%
General Service - Small Demand	84%	74%	66%	55%
General Service - Medium	79%	69%	62%	51%
General Service - Large 0 - 30 kV	68%	60%	54%	44%
General Service - Large 30 - 100 kV	79%	68%	59%	47%
General Service - Large >100 kV	81%	68%	58%	45%
Area and Roadway Lighting	99%	96%	93%	87%

Indexed Revenue To Cost Coverage Ratios

Class	**MH Recommended Study** **$0/Tonne**	**$10/Tonne**	**$20/Tonne**	**$40/Tonne**
Residential	96%	98%	100%	103%
General Service - Small Non-Demand	110%	111%	113%	115%
General Service - Small Demand	107%	107%	106%	106%
General Service - Medium	101%	100%	99%	98%
General Service - Large 0 - 30 kV	88%	87%	86%	85%
General Service - Large 30 - 100 kV	102%	98%	95%	91%
General Service - Large >100 kV	103%	97%	93%	87%
Area and Roadway Lighting	127%	138%	148%	166%

Substituting Marginal Generation Costs in the Cost of Service Study

Marginal Generation Cost		$ 0.0535	CAC/MSOS/MH II-36
Average Generation Cost:		$ 0.0236	D9 / B9 x 1000
Ratio:		227%	

	A	B	C	D	E	F	G	H
	Class	Total kWh	Marginal Cost of Generation $x1000	Allocated Generation Costs Schedule B6	Difference	Total Cost With Marginal Energy Costs	Revenue At Current Rates	RCC % At Current Rates
1	Residential	7,428,132,291	$ 399,650	$ 176,000	$ 223,650	$ 775,634	$ 413,604	53%
2	General Service - Small Non-Demand	1,826,839,792	$ 102,542	$ 45,158	$ 57,384	$ 182,673	$ 107,252	59%
3	General Service - Small Demand	1,951,644,665	$ 108,814	$ 47,920	$ 60,894	$ 169,557	$ 90,862	54%
4	General Service - Medium	3,341,939,337	$ 184,132	$ 81,089	$ 103,043	$ 280,606	$ 139,754	50%
5	General Service - Large 0 - 30 kV	1,670,798,576	$ 93,675	$ 41,253	$ 52,422	$ 138,733	$ 59,106	43%
6	General Service - Large 30 - 100 kV	857,657,425	$ 43,832	$ 19,303	$ 24,529	$ 58,505	$ 26,974	46%
7	General Service - Large >100 kV	5,661,262,687	$ 283,611	$ 124,898	$ 158,713	$ 355,473	$ 158,829	45%
8	Area and Roadway Lighting	112,203,907	$ 6,245	$ 2,750	$ 3,495	$ 22,944	$ 19,297	84%
9	Total	22,850,478,680		$ 538,371		$ 1,984,126	$ 1,015,677	51%

Combination of Marginal Energy Cost Plus CO2 Costs At $20/Tonne

Class	Marginal Cost of Service	CO2 Costs @ $20/Tonne	Total Cost of Service	Current Revenues	RCC % At Current Revenues	Indexed RCC % At Current Rates	Class Subsidy vs. Full Cost
Residential	$ 775,634	$ 106,812	$ 882,446	$ 413,604	47%	106%	$ 468,842
General Service - Small Non-Demand	$ 182,673	$ 26,604	$ 209,277	$ 107,252	51%	116%	$ 102,025
General Service - Small Demand	$ 169,557	$ 28,016	$ 197,574	$ 90,862	46%	104%	$ 106,712
	$ -	$ -	$ -	$ -			
General Service - Medium	$ 280,606	$ 48,116	$ 328,723	$ 139,754	43%	97%	$ 188,968
General Service - Large 0 - 30 kV	$ 138,733	$ 23,822	$ 162,554	$ 59,106	36%	83%	$ 103,449
General Service - Large 30 - 100 kV	$ 58,505	$ 11,546	$ 70,051	$ 26,974	39%	87%	$ 43,077
General Service - Large >100 kV	$ 355,473	$ 76,244	$ 431,718	$ 158,829	37%	84%	$ 272,889
Area and Roadway Lighting	$ 22,944	$ 1,398	$ 24,342	$ 19,297	79%	180%	$ 5,045
Total	$1,984,126	$ 322,559	$ 2,306,685	$ 1,015,677	44%	100%	$ 1,291,008

MH-8 JL-6 corrected 05 03 2006
(Replaces JL-6 in March 15th evidence and MH-8 attached to MH/RCM/TREE-8)

Elasticity Impact of Applying Full Costing

	Recommended Method	CO2 at $20/tonne	Marginal Generation Cost	CO2 @ $20/tonne and Marginal Generation Cost
Current MH Retail Revenues (excluding SEP)	$ 1,015,677	$ 1,015,677	$ 1,015,677	$ 1,015,677
MH Costs	$ 1,299,996	$ 1,622,555	$ 1,984,126	$ 2,306,685
Difference	$ 284,319	$ 606,878	$ 968,449	$ 1,291,008
% Increase in Price	28%	60%	95%	127%
Assumed Arc Elasticity (RCM/TREE/MH II-26b)	-0.25	-0.25	-0.25	-0.25
Retail Sales (kWh)	22,850,478,680	22,850,478,680	22,850,478,680	22,850,478,680
Additional Energy Available for Export	1,599,138,177	3,413,353,865	5,446,987,324	7,261,203,013
Assumed Marginal Export Price	$ 0.0535	$ 0.0535	$ 0.0535	$ 0.0535
Additional Revenue to Manitoba	$ 85,553,892	$ 182,614,432	$ 291,413,822	$ 388,474,361

Estimate of Impact on the Manitoba Economy of A New Aluminum Smelter

Estimated Demand, kilowatts		500,000
Load Factor		95%
Annual kWh Consumption		4,161,000,000
Current Rate for General Service Large 100 kv+		$ 0.02806
Annual Revenue		$ 116,757,660
Marginal Generation Cost (excluding CO2 costs)		$ 0.0535
Lost Wholesale Revenue / Opportunity Cost		$ 222,613,500
Net Rate Increase to MH Customers Under Current System		$ 105,855,840
Estimated Payroll		
Employees		500
Average annual compensation		$ 80,000
Annual Payroll		$ 40,000,000
Net Loss to Manitoba Economy		$ 65,855,840

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BUDGET 2002 AT A GLANCE

Budget 2002 builds on the 2001 and 2000 budgets. Together they provide:

- $500 million more, or 2.5 per cent per year, in spending for health, education, families and communities
- $244 million annually in personal tax reductions
- $288 million towards debt and pension liability reduction

- Major revenue challenges:
  - Global economic slowdown
  - Post-Sept. 11 impact
  - Federal accounting error ($408 million-plus impact)
  - Corporate income tax revenues down $230 million
- The budget is balanced with no draw required from Fiscal Stabilization Fund to balance 2001-02
- Overall budget spending increase only 2.5 per cent--lowest budget-to-budget increase in five years
- Only priority areas such as health, education, justice, and support for families and communities receive increases
- New personal income tax reductions in 2002--meaning the average Manitoban will see a 11.5 per cent cut in personal income taxes by 2003; another 5,400 Manitobans removed from the tax rolls in 2002
- New five-year plan to phase out the Education Support Levy on residential property taxes, saving taxpayers almost $100 million
- Third consecutive year of debt retirement payment of $96 million; improved plan to pay down debt and pension liability sooner
- No health care premiums or user fees introduced
- A payment of $288 million over three years from Manitoba Hydro based on U.S export profits to bridge the gap caused by federal error and corporate income tax revenue shortfall

Investing in Manitoba's Future

Over the past two years, enrolments have increased by nearly 12 per cent at colleges and universities. Funding for public schools will exceed $1 billion.

- University and college tuition fees remain 10% lower than 1999 levels
- Universities and colleges receive more operating funds
- Almost $16 million in post-secondary bursaries and scholarships
- Reduced administration costs to channel more money into the classroom
- Province funding 76% of the cost of public school education

Support for families

Budget 2002 encourages a better start in life by building on the accomplishments of Healthy Child Manitoba. Funding for child care alone has increased by $16 million over the past three years.

- Full restoration of the National Child Benefit continues by including families on assistance with children aged seven to 12, effective 2003
- New multi-year plan to put affordable, quality child care within reach of more families
- Healthy Schools pilot program to link public health services and local schools
- Aboriginal Child Welfare Initiative receives additional support

Parent-child centres, healthy pregnancy programs and FAS/FAE prevention continue to expand

Better health care for all

Manitobans have said they want health care service based on medical need, not ability to pay. Budget 2002 responds with innovative solutions and $2.8 billion in funding.

- Hospital improvements add new dialysis facilities at Seven Oaks, more surgery capacity in rural and northern centres, better emergency services at Victoria and improved critical care in Brandon
- The largest health capital project in Manitoba history to modernize and upgrade Health Sciences Centre
- Pharmacare increased by 26%; adjustments to deductibles
- Expanded community mental health services
- Obstetrical services get major upgrade in The Pas
- New community-based ultrasound services
- Tobacco taxes increase to prevent smoking and help offset the cost of the recent nurses' contract
- Provinces joining forces to create regional sites of excellence for advanced treatment, such as high-tech gamma knife neurosurgery in Manitoba

On track with tax cuts

With the relief provided in the last three budgets, the average Manitoban will see an 11.5% cut in personal income taxes by 2003.

- A 10% cut in the Education Support Levy on residential property and a new five-year plan to phase out the ESL – which will save taxpayers nearly $100 million and completely eliminate one property tax.

- $15.3 million in new personal income tax cuts, effective this year, which brings total income tax relief to $56 million for 2002
- The $400 Education Property Tax Credit has been increased by $150 over the past two years and will be maintained
- More Manitoba businesses to qualify for the lower small business tax rate--the fourth lowest in Canada--with three step increase in the threshold to $400,000 by 2005
- Four-year plan continues to reduce the tax rate on larger businesses, the general corporation income tax rate. The plan--which began in 2002 and is the first general corporation income tax cut since the Second World War--will see the general rate fall by 0.5 per cent in each of 2003, 2004 and 2005, where it will reach 15 per cent
- Retails sales tax lifted on feminine hygiene products, saving consumers $1 million annually

Balancing the books in uncertain times

Like other provinces, Manitoba faces tough financial challenges. A slow North American economy significantly reduced revenues, especially corporate income tax. Manitoba must also deal with continuing effects of federal accounting error. Here's how Manitoba is bridging the gap:

- Only priority areas receive an increase--most departments reduced
- Overall spending increase of 2.5%--the lowest budget-to-budget increase in five years
- Departments directed to reduce discretionary spending
- Strong debt management to save $20 million this year
- Staff costs reduced through overtime reductions and new vacancy management policy

Building safe, vibrant communities

For the first time in a decade, property values are rising in some inner-city neighbourhoods. Budget 2002 continues to provide more options for better lives and healthier communities.

- Support for successful revitalization programs like Building Communities, Neighbourhoods Alive! and Winnipeg Housing and Homelessness Initiative
- Increased policing to counter gangs, organized crime, theft and drunk driving
- Lighthouses and other youth programs supported to provide positive options
- Working with Winnipeg and municipalities on mosquito larvaciding program
- Continuing support for eight additional workplace safety inspectors and a full- time prosecutor for workplace safety violations

Keeping water and resources clean and safe

Environmental incentives and the Drinking Water Agency to protect precious natural assets.

- More resources dedicated to drinking water inspection, monitoring and northern system improvements
- Drainage projects receive $10.1 million, up $1.7 million in two years
- Sustainable development encouraged including increasing ethanol use and protecting forests, waterways and shore lands
- Clean hydro power offers Manitobans the lowest hydro rates in North America and initiatives to foster wind, geothermal and biomass projects

Making the most of economic opportunities

Budget 2002 builds on strong economic performance, including above average growth in GDP and the second lowest unemployment rate in the country.

- New five-year, $600 million highways program
- Immigration programs to augment our skilled workforce
- Further support for film and Manitoba's emerging new media industry
- R&D support will spur on advances in biotechnology, cardiovascular care and nutraceuticals
- Continued investment in venture financing pools to help Manitoba companies pursue new opportunities
- Hydroelectric advantage includes working towards expanding the new Wuskwatim generating station and merging Winnipeg and Manitoba hydro
- Improvements to crop insurance, new value added processing opportunities and innovative programs to strengthen rural Manitoba
- A new 10% tax credit will promote mineral exploration
- $40 million for floodway expansion

RETURN