Exhibit - N-28

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

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RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

IR-1: **Please describe the scope of your engagement by Avon in NSPI's 2007 Rate Application.**

Response: ISIS was requested by Avon to review the fuel portions of NSPI's Rate Application and to test the reasonableness of the fuel forecasts used therein.

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IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

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To: NSPI

From: Manfred Raschke

IR-2: **Please list all work conducted in electric utility Rate Applications during the last 12 months and please provide all copies of testimony provided in same (redacted as appropriate).**

Response: ISIS has not performed any work related to electric utility rate applications during the past year. ISIS's work primarily involves expert witness testimony and commercial litigation (one major case currently ongoing before the German courts involving coal quality - €60 million at issue). Within the past twelve months, ISIS also has been engaged by a major European utility to provide price forecasts for oil/natural gas, hard coal and brown coal, all for usage in electric generating plants in Germany, France, Netherlands and Belgium. ISIS's other areas of work, particularly in regard to renewables and CO_2 issues, is listed in the Appendix to the ISIS Testimony in this Rate Case.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

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RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

IR-3: **Please describe your proposed methodology for estimating natural gas and HFO prices for the 2007 test year.**

Response: In developing a price forecast for HFO and natural gas for 2007, ISIS looked primarily at the factors set out below and exercised judgment to arrive at a price for crude oil at $55-$60/bbl for WTI. ISIS then looked at the average monthly spread in 2006 between HFO and WTI to project the 2007 HFO price. ISIS did not propose a methodology for estimating natural gas prices in its evidence.

- The supply balance, particularly the outlook for additional OPEC and non-OPEC production coming on stream in 2007. The source for this data is primarily OPEC itself and CERA;
- The fundamental driver of demand is economic growth. ISIS examined GNP growth forecasts developed for 2007 by the IMF, the OECD, the ECB, and the European Commission, all of which show slower GNP growth for the United States, the Euro area and Japan in 2007 compared to 2006;
- Because of the significant contribution that the 22% increase in Chinese oil imports in 2004 made to driving global prices higher, ISIS particularly examined forecasts for China. The increase in imports fell in 2005 to 3% and was at approximately 6% in 2006. The International Energy Agency is forecasting lower import growth in 2007 compared to 2006 for China;
- ISIS looked at the data documenting rising oil and gas investment globally and in the United States;
- Since weather in the form of both winter temperatures and hurricane activity is a significant factor in both oil and gas prices, ISIS looked at the long range forecast produced by National Oceanic and Atmospheric

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

Administration (NOAA) and Environment Canada. Both show a trend for unusually warm temperatures over the first three months of 2007, particularly in the most populous portions in North America; that is, the East Coast, Midwest and the Great Lakes Region;

- ISIS also looked at the historic high levels of stocks for crude oil and fuel oil in the commercial petroleum chain;
- In addition, ISIS looked at the behaviour of HFO compared to crude prices during periods when oil prices soften. Typically during periods of softer prices the quality spreads between sweet low sulfur crude, such as WTI and Brent, compared to the average basket of OPEC crudes, which are more sour and heavier (these serve as a primary input into HFO production), widen and as a consequence, the spread between WTI and HFO tends to widen.

All of these factors were found to be either neutral or tending to drive pricing downward. The primary unknowable factor which has influenced crude prices, particularly during the past two years, are political events. Some analysts argued that the political risk premium in crude oil prices during the course of 2006 were $15-20/bbl. The primary political event that could lead to a significant escalation in oil prices would be an attack on Iran by the United States over the issue of Iran's nuclear development. Most political analysts, subsequent to the last congressional election, now believe that such an attack has become extremely unlikely.

A good example of the altered market sentiment at present is the reaction to the January 8, 2007 suspension of crude oil shipments through the Friendship

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

Pipeline, which carries about 30% (1.5 million bbl/d) of Russian oil to Europe, to Poland, Germany and Hungary due to a tariff dispute between Russia and Belarus. For a few hours in trading after the announcement, the price of WTI and Brent rose a dollar but then declined; throughout January 8-10 the market continued to test eighteen-month lows. The Friendship Pipeline carries approximately as much crude as the Alaska Pipeline to Prudhoe Bay. When it was temporarily shut in July 2006, it helped push oil prices to $78/bbl. The difference in market reactions is to be explained by altered sentiment. Financial investors are now leaving the oil market putting downward pressure on prices and causing a focus on fundamentals, such as high stock levels and lower demand due to warm winter weather.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

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To: NSPI

From: Manfred Raschke

IR-4: **Please explain your understanding as to how NSPI's hedging activities affect its HFO and natural gas costs in the test year.**

Response: NSPI uses a hedging program that is designed to reduce the impact of changes in market prices on the fuel that is consumed for electric generation. NSPI purchases both natural gas and HFO by means of contracts that contain market-related pricing provisions. It uses a hedging program in order to substitute financial instruments with fixed prices for its floating price obligations, thereby reducing the impact of market price volatility on the fuels that are used for generation. [redacted]

Time prior to consumption year	Quantity Hedged
[redacted]	

(CME IR-37)

To lock in HFO fixed prices, NSPI engages in over-the-counter financial transactions which exchange the floating prices in its physical purchase contract for fixed prices. [redacted] While the volumes hedged have been disclosed by NSPI, there is no comparable clarity in documenting how hedging decisions are made, what level of approval is required for financial commitments of significant

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

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magnitude with impact on the future fuel prices, and what type of analysis is done before entering into these financial transactions.

NSPI also engages in a natural gas hedging program that locks in fixed prices for the gas that it anticipates burning in the test year. [redacted]

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

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From: Manfred Raschke

IR-5: **Please list the factors that could cause oil prices to spike or increase in 2007.**

Response: Among the factors that could cause oil factors to spike or increase in 2007 are:

- Damage caused to production facilities and refineries by a major hurricane in the Gulf of Mexico;
- A terrorist attack on a major Saudi Arabian or Kuwaiti oil export terminal;
- A war between the United States and Iran.

None of these events need necessarily lead to a sustained spike in oil prices. As is noted in my Testimony (p. 15), during the Iran/Iraq War of the early 1980s, the oil loading and shipping infrastructure, both sides, was the target of numerous aerial attacks, yet this was a period of generally falling oil prices. Similarly, the price impact of hurricane damage or a terrorist attack will depend very much on market psychology and the level of stocks.

With the current level of commercial stocks, which by some estimates are approaching the physical limit of commercial storage capacity, the impact of a short-term supply disruption somewhere in the world will be perceived as much less significant then in a situation with low stocks. A good example has just occurred.

During the past several months as the perception has grown that fuel oil consumption in the winter of 2006/2007 will be significantly reduced due to unusually warm weather in both Europe and the Eastern United States, crude oil and heating oil prices have generally trended downwards. As well, the period has been characterized by the apparent exit of a large number of financial investors, particularly hedge funds from the market, increasing selling pressure and putting a

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

---

downward pressure on prices. A good test of these market projections occurred on January 8, 2005, and has continued since then. As a consequence of a dispute over transit payments in the Friendship (Druzhba) Pipeline that carries crude oil from Russia to Germany, Poland and Hungary, about 1.5 million bbls/day or 30% of Russian exports to Europe, the flow in that pipeline was cut off by the Russian operator, Rosneft. When initial reports of the pipeline shutdown surfaced, for a few hours oil prices went up by US$1.00/bbl. However, they soon fell with the outlook for continued warm weather overwhelming concern over the pipeline stoppage. The information from the affected governments in Poland, Germany and from the IEA indicated that crude oil stocks were ample to cover any shortfalls for several weeks.

WTI prices continued down into the US$54/bbl range while an 11 benchmark-crudes basket of OPEC oils fell to the US$ range of $51-$52/bbl.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

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From: Manfred Raschke

IR-6: **Please provide your understanding of the value of volume options in coal supply agreements. What is the appropriate way to value options?**

Response: The contractual provision in [redacted] coal contracts for a [redacted] volume option allows for significant flexibility in long and medium term contracts with fixed prices. If market prices decline, NSPI can reduce the volume [redacted] If, on the other hand, prices increase [redacted], it can increase the volume of that contract [redacted]. This has the benefit, therefore, of providing flexibility to the portfolio of contracts and a certain amount of price protection.

The text book way of valuing such an option in a commodity contract or a stock option is by use of the use Black-Scholes model, which was developed primarily for the valuation of stock options. Another widely used alternative is the Cox, Ross and Rubinstein binomial model. The Financial Accounting Standards Board (FASB) Statement No. 123 on *Accounting for Stock-based Compensation* requires a calculation of the fair value of a stock option at the date of its grant. It allows for the use of either the Black-Scholes model or a binomial model. A major input into the Black-Scholes model is a measure of the stock's or commodity's volatility. In the case of coal such as Venezuelan Guasare coal or the Glencore Colombian coal, it is difficult to obtain sufficient publicly available data points to determine the price volatility.

Moreover, it is not clear to me that the fixed price of the contract is not higher than it might otherwise be because it contains the [redacted] option. For the past six years I have served on the Board of Directors of a European coal producer (20 million tonnes per year). In bidding on a contract where the customer requests this type of volume flexibility, our company will seek a somewhat higher fixed price.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

In determining the value of this option, however, the company does not use the Black-Scholes model or any other similar sophisticated valuation methodology. Moreover, in contracts where the buyer has insisted on an option of volume reduction beyond a certain level, we have in turn introduced clauses that raised the price of the coal as a consequence of a voluntary volume reduction by the buyer beyond a certain point.

I would also note that I have served for four years on the Board of Directors of a Swiss electricity trading company. This was a physical trader in Eastern Europe and the Balkans which did not own generating assets. However, its focus was on actual physical trading of contracts, many of which contained volume options, but not on paper trading on one of the European electricity exchanges. During my four years as a Director (from 2000-2005) we, on numerous occasions, talked about the optionality in various contracts, but the company never used any sophisticated quantitative tools, like the Black-Scholes model, to value those options.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

IR-7: **Please estimate the value of the [redacted] options at the time the contracts were negotiated following the methodology described in response to the above.**

Response: Please see my comments in IR-6, particularly in regard to the measurement of price volatility for [redacted] and higher quality Colombian coal, such as in the [redacted] contracts.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

IR-8: **Reference page 2 middle paragraph**

"Such a 13% increase in electricity cost due to charges in commodity prices in 2007 seems highly inappropriate when consensus forecasting suggests that oil prices are now stable to falling and coal prices are softening and expected to fall during the next several years."

How do near term commodity price fluctuations affect a fuel and purchase power forecast built on a procurement strategy of a portfolio of long, medium and short term fuel supply contracts?

Response: A properly constructed portfolio of long, medium and short-term contracts will reduce the risk of upward spikes in prices, but will also reduce the opportunity to take advantage of significantly lower prices. The portfolio approach serves to levelize prices and remove volatility. This applies, however only to NSPI's coal purchasing. The textual reference cited in the above question goes primarily to NSPI's oil pricing, which accounts for most of the increase in the commodity portion of the rate request. Of the $40.1 million dollars of commodity cost increases, some 74.9% or C$29.9 million is attributable to higher HFO and LFO costs. My comment is directed at those oil prices and the fact that ISIS believes that oil prices in 2007 will be below those in 2006.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

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From: Manfred Raschke

IR-9: **Reference page 10 Figure 2**

Please extend graph to December 31, 2006.

Response: Please find below the underlying data for page 10 Figure 2. The source is the International Energy Agency publication, *Energy Prices and Taxes*. This is a quarterly publication (January, April, July and October). The latest available data that we have in our library goes to the end of the second quarter and reflects time lags in IEA publication and data collection process. However, in order to continue the graph to at least November 2006 on a monthly basis, please refer to Figure 19 in the ISIS Testimony, which is based on EIA data that is more current and issued at weekly intervals. This shows the average monthly relationship in 2005 and 2006 for WTI and HFO.

Quarter	US$/bbl HFO	US$/bbl WTI
1990		
1Q	15.64	21.79
2Q	12.03	17.8
3Q	16.39	26.57
4Q	21.04	31.91

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

Quarter	US$/bbl HFO	US$/bbl WTI
1991		
1Q	13.15	21.83
2Q	10.25	20.75
3Q	10.64	21.68
4Q	11.6	21.75
1992		
1Q	8.92	18.89
2Q	12.02	21.2
3Q	14.01	21.66
4Q	14.42	20.46
1993		
1Q	11.93	19.81
2Q	12.17	19.75
3Q	10.93	17.78
4Q	9.83	16.42

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

Quarter	US$/bbl HFO	US$/bbl WTI
1994		
1Q	10.73	14.84
2Q	11.22	17.81
3Q	13.2	18.49
4Q	13.72	17.67
1995		
1Q	15.12	18.36
2Q	16.1	19.33
3Q	12.82	17.83
4Q	13.85	18.12
1996		
1Q	14.91	19.57
2Q	14.94	20.34
3Q	15.49	22.43
4Q	18.52	24.75

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

Quarter	US$/bbl HFO	US$/bbl WTI
1997		
1Q	14.83	22.75
2Q	14.43	20
3Q	15.46	19.8
4Q	16.3	19.92
1998		
1Q	10.58	15.97
2Q	11.57	14.59
3Q	9.62	14.17
4Q	9.21	12.88
1999		
1Q	8.86	13.05
2Q	11.94	17.66
3Q	16.52	21.74
4Q	18.45	24.56

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

Quarter	US$/bbl HFO	US$/bbl WTI
2000		
1Q	19.97	28.84
2Q	20.59	28.82
3Q	21.22	31.64
4Q	20.8	31.92
2001		
1Q	18.53	28.77
2Q	17.53	27.86
3Q	17.78	26.64
4Q	15.58	20.31
2002		
1Q	16.03	21.56
2Q	21.39	26.27
3Q	23.34	28.19
4Q	22.84	28.21

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

Quarter	US$/bbl HFO	US$/bbl WTI
2003		
1Q	27.96	34.06
2Q	20.93	29.11
3Q	25.19	30.18
4Q	23.7	31.17
2004		
1Q	23.09	35.23
2Q	25.92	38.31
3Q	25.36	44.2
4Q	25.89	48.28
2005		
1Q	28.82	49.7
2Q	35.81	53.03
3Q	39.31	63.05
4Q	40.72	59.99

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

Quarter	US$/bbl HFO	US$/bbl WTI
2006		
1Q	45.83	63.29
2Q	48.52	70.35

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

IR-10: **Reference page 17 second paragraph**

(a) **Does Dr. Raschke suggest that global oil prices have increased enough to slow global economic growth? How much of an increase in oil prices is necessary to slow growth of global economies?**

(b) **Has "peak oil" occurred?**

Response: (a) It is my belief that high oil prices in the last two years are contributing to a slowing in economic growth. Based on the earlier oil crisis, the IEA has calculated that a US$10/bbl oil price increase reduces a global GDP by about 0.5%. A global economic slowdown, however, did not occur during 2005 and 2006, and there are a number of explanations. Many economists believe that the nominal increase in prices this time, compared to the oil crisis of the mid-1970s and early 1980s, did not spark an immediate increase in inflation, in large part due to globalization and a more benign policy environment created by the actions of the major central banks. The earlier oil crises in the 1970s and 1980s saw a swift spread of inflation from the energy sector into labour costs, sparking a high inflation environment, which was only brought under control through much higher interest rates, in turn leading to a collapse of economic growth.

This time around there is very little indication of the spread of rising in commodity prices to other sectors of the economy. As a consequence, the negative economic impact of high oil prices has been moderated and delayed. However, it is increasingly clear that the primary concern of the U.S. Federal Reserve is inflation sparked by higher oil prices, and as a consequence, there appears now to be less prospect for lower interest rates

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

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in 2007, which would serve as an economic stimulus to an economy that is growing more slowly than in the past several years. In Europe as well, the ECB is primarily concerned with inflation and anticipates raising rates several times for the Euro area in 2007. Such higher interest rates in turn serve as a drag on economic growth and contribute significantly to the forecasts by the IMF, the OECD, the European Commission and private sector banks such as HSBC (the latter most recently being particularly negative about the U.S. economy) for 2007.

It appears that the IEA formula of a US$10 increase in oil prices resulting in a 0.5% reduction in global GDP is no longer applicable. There are a number of reasons for this. Most significant is the decrease in energy intensity of all of the major developed economies. The most dynamic sectors in both the U.S. and the Euro zone today are various portions of the service economy, which are significantly less dependent on energy inputs then the heavy industry focused economies that prevail in the developed world in the 1970s.

A further factor affecting the economic response to oil prices is that China, which is the most rapidly growing major importer of crude oil, is only passing a portion of the higher cost on to domestic consumers. In effect, state oil companies are subsidizing oil consumption at below world market prices in China at present. The high oil prices have, however, forced the Chinese to re-concentrate their efforts on developing more coal-fired and nuclear resources for electric generation and has caused a reevaluation of the use of imported pipeline natural gas and LNG, particularly since the latter is tied in its pricing to the international price of oil.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

(b) No, I do not believe "peak oil" has occurred. There is a wide range of expert opinion on this; the most pessimistic being Matt Simmons (author of *Twilight in the Desert: The Coming Saudi Oil Shock and the World Economy*). CERA puts peak oil after 2020 and Shell in 2025 or later.

However, resource economists would argue that the problem in fact does not exist. Historically, no mineral, including oil, has ever been exhausted. If and when the cost of finding and extraction of a resource goes above the price that consumers are willing to pay, the industry begins to disappear. The quantity of oil in the ground, when extraction stops and how much was there before extraction began are unknown and unknowable. The amounts extracted are primarily determined by cost and price; so it is for other minerals and so it will be for oil.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

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From: Manfred Raschke

IR-11: **Reference page 22 figure 11**

What percentage of U.S. gasoline consumption was provided by ethanol in 2005?

Response: U.S. motor gasoline consumption in 2005 was 384.7 million gallons per day. According to the Renewables Fuels Association, ethanol demand in 2005, including both domestic production and imports, averaged 11.1 million gallons per day or 2.9% of total gasoline consumption. By 2006, based on data to October, it appears the number will be about 3.8%. Depending on market psychology, a relatively small change of this type can have a significant impact on prices. The warm winter of 2006/2007 affects only some 6% of U.S. total daily oil consumption of 21 million bbls/day. Even though winter fuel oil is only 6% of this and the current warming trend is reducing this consumption by about a third, that is sufficient to have a significant depressing affect on global oil prices, reducing WTI by approximately $10/bbbl over a two month period.

NOVA SCOTIA UTILITY AND REVIEW BOARD

IN THE MATTER OF: The *Public Utilities Act*, R.S.N.S. 1989, c.380 as amended

IN THE MATTER OF: An Application by Nova Scotia Power Incorporated and a Hearing for Approval of Certain Revisions to its Rates, Charges and Regulations

REDACTED

RESPONSE TO INFORMATION REQUESTS

To: NSPI

From: Manfred Raschke

IR-12: **Reference page 57 last paragraph**

"... particularly since gas has the advantage of being able to respond quickly to changes in generation from the growing volume of onshore (and in the future offshore) wind projects and other renewables ...."

What requirement does a growing volume of renewable sources put on the other generation?

Response: A growing volume of renewable resources has the potential to require thermal generating assets with a greater ability to respond flexibly to changes in the production profile of the renewable asset. Not all renewables are intermittent. Primarily, wind and solar are intermittent whereas biomass and biogas plants, typically in Europe, produce at upwards of 6,000 hours per year with biogas plants in excess of 8,000 hours.

European systems, which have significantly higher wind and renewable components then Nova Scotia has at present, have extensive experience with incorporating intermittent renewable production. This experience shows that while a gas-fired combined cycle project has the most flexibility, some systems have been able to balance their wind production using flexible hard coal, and in one instance even, a flexible brown coal plant that was specifically designed to run in mid-merit operation. A major factor in reducing the need for capacity that can respond within minutes rather than hours, is improved wind forecasting. In both Scandinavia and on the E.on system (in Germany) forecasting models used for predicting wind power production now have error rates down to 9% in day ahead forecasts and 2% in one hour ahead forecasts, significantly reducing the need for capacity that can respond within minutes, such as open cycle turbines.