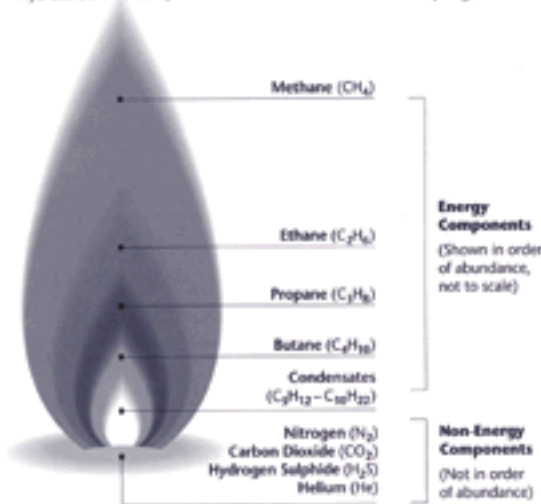


GLOSSARY

Common components of unprocessed natural gas

Natural gas is mostly methane. Methane (CH₄) is the simplest hydrocarbon molecule, with one atom of carbon and four of hydrogen.



Alternate Dispute Resolution. Processes that are alternative or complementary to traditional regulatory process such as technical workshops, issues meetings, discussion groups and negotiated settlements. Regulatory participants resolve issues outside the formal quasi-judiciary hearing process saving time and regulatory costs.

Aquila Networks Canada. With its head office in Calgary, Alberta, Aquila operates electricity distribution system in Southern and Central Alberta and provides generation, transmission and distribution services in South Central British Columbia (Kootenays and Okanagan) to 135,000 customers. Aquila, previously Utilicorp, purchased West Kootenay Power and assets from Teck Cominco.

Biomass energy. Energy derived from organic matter, such as wood residue, agricultural waste, and municipal solid waste.

Capacity. The maximum power that a generating unit, generating station, or other electrical apparatus can supply, usually expressed in megawatts.

Coal Seam. A mass of coal, occurring naturally at a particular location, that can be commercially mined.

Cogeneration. The combined production of electricity and useful heat, used for industrial, commercial, heating, or cooling purposes.

Combined cycle gas turbine. A power plant that uses the waste heat from one or more gas turbines to produce steam for conventional steam turbines, resulting in higher fuel efficiency.

Distribution. The delivery of energy to retail consumers.

Distribution system. The facilities and equipment dedicated to delivering electricity, gas, steam or water to retail customers.

Dividend. An annual payment by BC Hydro to the Province of British Columbia as its one shareholder.

Economies of scale. Characteristic of an industry where long-run average costs decline with volume of production.

Electricity. A manufactured form of energy, as opposed to naturally occurring energy resources, such as coal, oil, or natural gas. On a large scale, electricity is produced by rotating machines (generators) that operate on the principle that an electric current

is generated whenever a current moves through a magnetic field.

Emission. A discharge into the air, land, or water from an industrial process, transportation vehicle, household activity, or other source.

Energy. Defined by physicists as the capacity for doing work. Energy can be produced from water, coal, natural gas, biomass and other sources.

Fuel cell. An electrochemical device that continuously converts the chemical energy of a fuel (e.g., hydrogen) and an oxidant into electric energy. Fuels cells can used to power vehicles or to generate electricity in stationary applications.

Generator. An entity that owns and operates an electricity generating plant.

Geothermal energy. Energy extracted from the earth usually in the form of steam that can be used for ground source heat pumps, water heating, or electricity generation.

Gigawatt-hour (GWh). One million kilowatt-hours.

Greenhouse gas emissions. Emissions of a greenhouse gas, such as carbon dioxide, methane, or nitrous oxide, which contribute to trapping of reradiated heat in the earth's atmosphere and warming of the planet's surface.

Grid. A network of electric power lines and connections.

Joule. An international unit of energy.

Kilowatt-hour (kWh). The amount of electrical energy produced or consumed by a one-kilowatt unit for one hour (1,000 watt hours). In B.C. the average annual residential use is about 10,000 kWh.

Landfill gas energy. Electricity produced by collecting and burning methane gas at landfill sites.

Large hydro. A hydroelectric power plant greater than 50 MW in size.

Load. The amount of electric power or energy consumed by a particular customer or group of customers.

Megawatt (MW). 1,000 kilowatts or one million watts.

Micro hydro. Hydroelectric generator with a capacity of less than 2 MW.

Municipal solid waste energy. Electricity produced by burning garbage in a boiler for steam generation.

Photovoltaic energy. Electricity produced directly from sunlight using semiconductors built into solar panels or roofing materials.

Peak demand. The maximum load consumed by a customer, group of customers, or system in a stated period of time, such as a month or year.

Power. The rate at which electric energy is delivered, measured in watts, kilowatts, megawatts, etc.

Power system. The interconnected system of facilities and equipment used by an electric utility to supply electricity to its customers. The system includes generating stations, transformers, switching stations, transmission lines, substations, distribution lines, and circuits to the customer's premises.

Renewable resources. Sources of energy that are inherently self-renewing, such as water power, solar energy, wind energy, tidal energy, geothermal energy, wood residue energy, and energy from municipal waste.

Small hydro. Run-of-river hydroelectric power plants greater than 2 MW and less than 50 MW in size. Run-of-river means that the streamflow passing through the powerhouse is basically the same as the natural streamflow, implying that there is no (or minimal) storage reservoir.

Solar energy. The radiant energy of the sun that can be converted into other forms of energy, such as heat (e.g., for water heating) or electricity.

Stepped rates. Rate structure where the unit price rises with consumption.

Terrawatt-hour (TWh). One thousand gigawatt-hours.

Thermal coal. Coal used primarily to generate heat, as opposed to metallurgical coal which is converted to coke for use in steel production.

Thermal power plant. A facility that burns fossil fuels (oil, coal, or natural gas) or uses nuclear energy to generate electricity.

Tidal energy. Electricity produced by harnessing the natural rise and fall of the tide in an estuary or bay of the ocean.

Time-of-use rates. The pricing of electricity based on its estimated cost during a particular time period.

Transmission. The transfer of electricity over power lines and related equipment to the point of transformation for distribution to retail consumers.

Transmission system. The power lines and other facilities and equipment of a power system that deliver electricity from generating facilities to the distribution system.

Water licence. A regulatory permit, issued by Land and Water BC, that provides for the use of a specific quantity of a provincial water resource and authority to construct associated works, such as power facilities.

Water rental. A royalty collected by the Province for the use of water.

Wave energy. Electricity produced by harnessing the natural rise and fall of waves in the ocean.

Wind energy. Electricity produced from a system of airfoils or blades that spin a drive shaft to capture the kinetic energy of the wind.

Wood residue energy. Electricity produced by burning the residues from the forest product sector in a boiler for steam generation.



APPENDIX 1: Comparison of Energy Policy Task Force Recommendations with Energy for Our Future: A Plan for BC

TASK FORCE RECOMMENDATION	ENERGY PLAN ACTION	COMMENT
CONSERVATION, EFFICIENCY AND ALTERNATIVE ENERGY		
4.01 Use a portion of the endowment dividend to establish a foundation that supports comprehensive research and development in conservation, efficiency and alternative energy.		<i>No move to market prices means there is no endowment dividend to fund a foundation.</i>
4.02 Set portfolio standards for renewable energy; these standards would apply to electricity distribution companies.	Policy Action #20 Electricity distributors will pursue a voluntary goal to acquire 50 percent of new supply from BC Clean Electricity over the next 10 years.	<i>The energy plan builds on the task force's recommendation by broadening the definition for a portfolio standard and increasing the percentage from 30 percent to 50 percent.</i>
4.03 Adopt time-of-use pricing and net metering.	Policy Action #21 New rate structures will provide better price signals to large electricity consumers for conservation and energy efficiency.	<i>The energy plan provides a framework to pursue new rate options for conservation and energy efficiency.</i>
4.04 Rewrite the Energy Efficiency Act and Regulations.	Policy Action #22 The Province will update and expand its Energy Efficiency Act, and will work with the building industry, governments, and others to improve energy efficiency in new and existing buildings.	<i>The energy plan adopts the task force's recommendation.</i>
4.05 Develop a wind project with private-sector expertise using federal funding as announced in the federal budget of December 2001.	Policy Action #13 The private sector will develop new electricity generation, with BC Hydro restricted to improvements at existing plants.	<i>The energy plan provides the private sector with the framework to pursue projects.</i>
N/A	Policy Action #23 The Utilities Commission Act will be amended to remove a disincentive for energy distributors to invest in conservation and energy efficiency.	<i>The energy plan provides regulated distributors with the tools to pursue energy conservation and efficiency.</i>
ELECTRICITY		
5.01 Develop a wholesale electricity market based on open access to the electricity transmission system. The development of this market must be consistent with market developments in Alberta and the US Pacific Northwest.	Policy Action #1 A legislated heritage contract will preserve the benefits of BC Hydro's existing generation. Policy Action #14 Under new rate structures, large electricity consumers will be able to choose a supplier other than the local distributor. Policy Action #15 The BC Hydro Transmission Corporation will improve access to the transmission system and enable IPP participation in US wholesale markets.	<i>While the task force recommended the development of a wholesale electricity market in B.C., the energy plan builds on two themes: low electricity rates and high reliability and security. Low electricity rates will be assured through a legislated heritage contract. A robust market for new supply will be created providing market discipline and opportunities.</i>
5.02 Establish an independent transmission entity as a Crown corporation clearly separate from all generators, distribution utilities and retailers. All transmission in the province needs to be coordinated by that entity. The entity would be regulated and would: <ul style="list-style-type: none"> • manage transmission assets; • ensure reliability and security of the system; • administer a wholesale market; and • schedule and balance the transmission system. The establishment of an independent transmission entity would necessitate the restructuring of BC Hydro.	Policy Action #15 The BC Hydro Transmission Corporation will improve access to the transmission system and enable IPP participation in US wholesale markets. Policy Action #16 The BC Utilities Commission will determine the terms and rates for this new transmission entity.	<i>The energy plan follows the task force's recommendation with the exception that BC Hydro Transmission Corporation will not own the transmission assets. The transmission assets will remain with BC Hydro.</i>

ELECTRICITY		
<p>5.03 Restructure BC Hydro. A new Crown corporation responsible solely for generation from the endowment assets and Burrard Thermal needs to be established. In addition, four separate regional distribution utilities need to be established. Non-core assets need to be handled in a separate entity.</p>	<p>Policy Action #8 BC Hydro's distribution will operate as a separate line of business from generation.</p>	<p><i>The energy plan does not support the creation of separate generation and distribution Crowns. Instead, lines of business for generation and distribution will be created to pursue efficiencies and complement the heritage contract noted in Policy Action #1.</i></p>
<p>5.04 Establish Crown-owned entities on a commercial basis to resemble comparable, non-government-owned commercial enterprises.</p>		<p><i>The energy plan follows the task force's recommendation. BC Hydro is already structured in this manner. This plan does not create numerous Crowns.</i></p>
<p>5.05 Encourage private-sector investment in additional electricity generation in the province. This generation needs to be for both domestic and export markets.</p>	<p>Policy Action #13 The private sector will develop new electricity generation, with BC Hydro restricted to improvements at existing plants.</p>	<p><i>The energy plan adopts the task force's recommendation by clarifying that the private sector will develop new electricity generation.</i></p>
<p>5.06 Recognize Burrard Thermal as integral to British Columbia's electrical system. Burrard Thermal can be upgraded or replaced, the latter requiring lead time and significant financial resources.</p>		<p><i>The Province will establish a Committee of Members of the Legislative Assembly to review Burrard Thermal operations and make recommendations on phasing out the existing facilities.</i></p>
<p>5.07 Recognize Williston Reservoir's direct and valuable role in supporting electricity generation on the Peace River. The current water license for the Williston Reservoir should be respected.</p>		<p><i>A water use plan is being developed for the Peace River system and will be brought to Cabinet for final approval. WUP is a collaborative process to change the operations of hydroelectric facilities that reflect contemporary values and scientific research.</i></p>
<p>5.08 Establish 10-year transitional arrangements for the market pricing of generation from the Columbia and Peace River dams, referred to as the endowment, and ensure all customers receive a fair share of the endowment through a rebate. The remaining rebate is to be government revenue with a portion directed to the Foundation on Conservation, Efficiency and Alternative Energy. The Province also needs to take the following complementary policy action:</p> <ul style="list-style-type: none"> • remove the Provincial Sales Tax on energy inputs for industry, a tax policy unique to British Columbia; • provide accelerated write-offs for investment in energy-saving technology; and • provide rate design incentives to promote energy efficiency by all consumers. 	<p>Policy Action #1 A legislated heritage contract will preserve the benefits of BC Hydro's existing generation.</p> <p>Policy Action#2 BC Hydro ratepayers will continue to benefit from electricity trade.</p> <p>Policy Action #21 New rate structures will provide better price signals to large electricity consumers for conservation and energy efficiency.</p>	<p><i>Similar to the task force's recommendation, the energy plan has a 10-year heritage contract. However, the price will be based upon costs of production rather than set by market prices. Further, BC Hydro ratepayers will continue to benefit from electricity trade.</i></p> <p><i>The Province has eliminated the social services tax for production machinery and equipment. Further changes may be reviewed as part of the annual budget process.</i></p> <p><i>The energy plan adopts part of the task force's recommendation. Starting with large electricity consumers, a stepped rate will provide an incentive for conservation and energy efficiency. These consumers will also be able to choose a supplier other than the local distributor. Developing a similar program for other rate classes may be more complex, however, some elements may be pursued in the future.</i></p>
<p>5.09 Eliminate the electricity rate freeze on January 1, 2003, or sooner, and institute at least a three per cent per annum rate increase for three years to provide funding for electricity infrastructure upgrades and expansion, cost of service and the foundation.</p>	<p>Policy Action #5 The BC Utilities Commission will once again regulate BC Hydro rates.</p>	<p><i>The energy plan does not adopt the task force's recommendation to prescribe a rate increase. Rather, the BC Utilities Commission will review and approve the appropriate rates.</i></p>
<p>5.10 Ensure the move to market pricing is fully coordinated with other major policy changes underway. This is particularly important in the forest sector.</p>		<p><i>There is no move to market pricing.</i></p>
<p>5.11 Ensure distribution companies send strong price signals to consumers by reflecting full market prices in electricity bills.</p>	<p>Policy Action #21 New rate structures will provide better price signals to large electricity consumers for conservation and energy efficiency.</p>	<p><i>The energy plan partially adopts the task force's recommendation. Starting with large electricity consumers, a stepped rate will provide an incentive for conservation and energy efficiency.</i></p>

ELECTRICITY		
N/A	Policy Action #3 Public ownership of BC Hydro's generation, transmission and distribution assets will continue.	
N/A	Policy Action #4 BC Hydro will outsource the delivery of services where costs can be reduced for electricity consumers while maintaining quality of service.	
N/A	Policy Action #6: The Vancouver Island Generation Project will be reviewed by the BC Utilities Corporation to determine if it is the most cost-effective means to reliably meet Island power needs.	
N/A	Policy Action #9 : Electricity distributors will acquire new supply on a least-cost basis, with regulatory oversight by the BC Utilities Commission.	
OIL AND NATURAL GAS		
6.01 Support and encourage industry to establish one or more natural gas storage facilities in or near the Lower Mainland, possibly including Vancouver Island, to serve British Columbia markets. The storage facility must be accessible to all parties selling natural gas directly to consumers and should be regulated by the BC Utilities Commission.	Policy Action #7 High reliability and energy security will be maintained through well-functioning natural gas markets and coordinated electricity planning.	<i>The moratorium on drilling for underground storage will remain. The Province is confident that market participants will develop the appropriate infrastructure and price risk mitigation measures.</i>
6.02 Through clear, certain and proactive planning and regulation, support, encourage and facilitate timely pipeline expansion. To ensure British Columbia's natural gas transmission system has adequate capacity to meet demand, the Task Force also recommends the following: <ul style="list-style-type: none"> • sound and independent supply/demand forecasts to assist regulators and the market; • investment returns that are competitive in the North American market; and • establish a clear process for the BC Utilities Commission to ensure that adequate gas supplies and transmission capacity are reserved for the domestic market to ensure these consumers have access to natural gas at reasonable, stable rates. 	Policy Action #7 High reliability and energy security will be maintained through well-functioning natural gas markets and coordinated electricity planning. Policy Action #12 The structure of the BC Utilities Commission, and its mandate in regulating BC Hydro and other energy distributors, will be strengthened. Policy Action #17 The Ministry of Energy and Mines will provide support for continued industry investment in natural gas production over the next 10 years.	<i>The energy plan adopts most of the components of this recommendation. The Province is confident that market participants will develop the appropriate infrastructure and price risk mitigation measures. With a strengthened and focussed BC Utilities Commission, regulatory oversight will be in place ensuring that consumers have access to natural gas at reasonable, stable rates.</i>
6.03 Promote road infrastructure, specifically for oil and gas. In setting road priorities, consideration should be given to the economic benefits of resource development. Tools to help develop the infrastructure include innovative public-private partnerships and fiscal measures.	Policy Action #18 Pre-tenure and land use planning, as well as northern road improvements, are improving access to oil and gas resources.	<i>The energy plan adopts the task force's recommendation.</i>
6.04 Expedite the development of pre-tenure plans in special management areas so that resource development, as envisioned in the land use planning process, can occur in a timely manner. Land-use priorities and conditions of access should be defined whether in special management areas, which require pre-tenure plans, or elsewhere.	Policy Action #18 Pre-tenure and land use planning, as well as northern road improvements, are improving access to oil and gas resources.	<i>The energy plan adopts the task force's recommendation.</i>

Continued

OIL AND NATURAL GAS		
<p>6.05 Investigate appropriate measures for petroleum and natural gas tenure that allow for large-scale regional exploration within Interior basins.</p>	<p>Policy Action #17 The Ministry of Energy and Mines will provide support for continued industry investment in natural gas production over the next 10 years.</p> <p>Policy Action #10 Development of coalbed methane and other unconventional resources will be encouraged to provide a new source of energy supply and opportunities for regional economic development.</p>	<p><i>The energy plan adopts the task force's recommendation.</i></p>
<p>6.06 Undertake geoscience studies aimed at enhancing opportunities in underexplored petroleum regions, such as the Interior basins, and identify underexplored or new petroleum resources for development in established regions within Northeast British Columbia.</p>	<p>Policy Action #17 The Ministry of Energy and Mines will provide support for continued industry investment in natural gas production over the next 10 years.</p>	<p><i>The Ministry of Energy and Mines adopts the task force's recommendation and will undertake geoscience studies.</i></p>
<p>6.07 Develop royalty regimes for new resource opportunities such as tight gas and Interior basins.</p>	<p>Policy Action #17 The Ministry of Energy and Mines will provide support for continued industry investment in natural gas production over the next 10 years.</p> <p>Policy Action #10 Development of coalbed methane and other unconventional resources development will be encouraged to provide a new source of energy supply and opportunities for regional economic development.</p>	<p><i>As part of the Province's commitment to provide support for continued industry investment in natural gas production, new royalty regimes will be explored.</i></p>
<p>6.08 Create a system of royalty credits to encourage investment in high-cost and high-risk new resources.</p>	<p>Policy Action #17 The Ministry of Energy and Mines will provide support for continued industry investment in natural gas production over the next 10 years.</p> <p>Policy Action #10 Development of coalbed methane and other unconventional resources development will be encouraged to provide a new source of energy supply and opportunities for regional economic development.</p>	<p><i>A new coalbed methane royalty is already in place. As part of the Province's commitment to provide support for continued industry investment in natural gas production, new royalty regimes for conventional and unconventional resources are being explored.</i></p>
<p>6.09 Insist that the federal government lives up to its commitment under the Northern Pipeline Act to consult with the province and that the two jurisdictions work to facilitate passage of the pipeline through British Columbia to maximize benefits for the people of the province.</p>		<p><i>The Province is confident that market participants will develop the appropriate infrastructure. The Province will work with other levels of government and industry for the benefit of the province.</i></p>
<p>6.10 Establish flaring standards for both test flaring and ongoing flaring for operational purposes.</p>	<p>Policy Action #24 The government is developing strategies to manage B.C.'s greenhouse gas emissions and air quality in threatened airsheds.</p>	<p><i>The Oil and Gas Commission and the Ministry of Water, Land and Air Protection are in discussions on transferring the responsibility to the Oil and Gas Commission under the Oil and Gas Waste regulation.</i></p>
<p>6.11 Promote acid-gas re-injection as the preferred method for handling waste-gas production by developing appropriate regulatory and fiscal regimes to ensure this becomes the method of choice for the industry.</p>	<p>Policy Action #24 The government is developing strategies to manage B.C.'s greenhouse gas emissions and air quality in threatened airsheds.</p>	<p><i>B.C.'s strategies to manage greenhouse gas and other emissions will look at numerous alternatives, including acid-gas re-injection.</i></p>
<p>6.12 Evaluate the potential and technical feasibility for large-scale greenhouse-gas (carbon dioxide)sequestration or subsurface waste-gas disposal in regions likely to require these technologies.</p>	<p>Policy Action #24 The government is developing strategies to manage B.C.'s greenhouse gas emissions and air quality in threatened airsheds.</p>	<p><i>B.C.'s strategies to manage greenhouse gas and other emissions will look at numerous alternatives, including sequestration.</i></p>
<p>6.13 Insist that the federal government engage in serious discussions on treaty-related issues.</p>		<p><i>The Province is already engaged with the federal government in discussions on treaty-related issues.</i></p>
<p>6.14 Work with industry to find creative means to engage First Nations in the development of energy in the province.</p>		<p><i>The Province is already working with industry to find creative means to engage First Nations in the development of energy in the province.</i></p>

Continued

OIL AND NATURAL GAS		
6.15 Support and encourage increased customer choice of provider and offerings for all natural gas customers and, particularly, residential and small commercial customers.	Policy Action #19 Natural gas marketers will be allowed to sell directly to small customers, and will be licensed to provide consumer protection.	<i>The energy plan adopts the task force's recommendation.</i>
6.16 Eliminate the requirement for Energy Removal Certificates in order to streamline the regulatory approval process and avoid duplication of National Energy Board functions.		<i>Energy Removal Certificates will be eliminated as part of government's New Era commitment to reduce unnecessary red tape and regulation by one third within three years.</i>
N/A	Policy Action #11 The Ministry of Energy and Mines will establish a dedicated provincial offshore oil and gas team to develop a provincial position, work with the federal government and move effectively toward development of the offshore resources.	<i>The energy plan addresses offshore oil and gas exploration and development. The task force concluded that this was not part of its terms of reference.</i>
COAL		
7.01 Review best practices, including the application of new coal technology to meet environmental standards and encourage pilot projects by industry.	Policy Action #24 The government is developing strategies to manage B.C.'s greenhouse gas emissions and air quality in threatened airsheds. Policy Action #26 To allow for a fair evaluation of coal-fired electricity projects, final emission standards will be adopted for coal-fired power plants.	<i>The energy plan adopts the task force's recommendation regarding emission guidelines for coal-fired power plants.</i>
7.02 Finalize emission guidelines for coal generating plants with stakeholders as soon as possible. As any provincial guideline may be superseded by federal requirements, relevant inter-governmental discussions need to be undertaken.	Policy Action #24 The government is developing strategies to manage B.C.'s greenhouse gas emissions and air quality in threatened airsheds. Policy Action #26 To allow for a fair evaluation of coal-fired electricity projects, final emission standards will be adopted for coal-fired power plants.	<i>The energy plan adopts the task force's recommendation.</i>
7.03 Develop guidelines on boiler emission standards.	Policy Action #24 The government is developing strategies to manage B.C.'s greenhouse gas emissions and air quality in threatened airsheds.	<i>The energy plan adopts the task force's recommendation. The Ministry of Water, Land and Air Protection has launched a broad review of the 20-year-old Waste Management Act. The review process will take approximately 18 months to complete.</i>
7.04 Ensure that applications for permits are dealt with in a timely manner and that review processes are transparent and efficient. Impose timelines for the permitting process and review public consultation and appeal provisions to ensure that the public interest is adequately protected.	Policy Action #25 Provincial processes for environmental assessment, water licensing and waste permitting are being streamlined.	<i>The Ministry of Water, Land and Air Protection has launched a broad review of the 20-year-old Waste Management Act. The review process will take approximately 18 months to complete. A reformed Environmental Assessment process encourages concurrent permitting.</i>
7.05 Review current environmental assessment processes to ensure coal is treated consistently with other energy sources.	Policy Action #25 Provincial processes for environmental assessment, water licensing and waste permitting are being streamlined.	<i>A reformed environmental assessment legislation was introduced in the spring 2002 session of the Legislature and will be brought into force by the end of 2002.</i>
REGULATION		
8.01 Strengthen the capacity of the Ministry of Energy and Mines to play the lead role in energy policy formulation and implementation in the province.		<i>The ministry's service plan includes performance measures to implement the energy policy.</i>

Continued

REGULATION		
<p>8.02 Ensure the Ministry of Sustainable Resource Management makes energy a priority in its pre-tenure planning activity.</p>	<p>Policy Action #18 Pre-tenure and land use planning, as well as northern road improvements, are improving access to oil and gas resources.</p>	<p><i>The Ministry of Sustainable Resource Management recently approved the Besa-Prophet pre-tenure plan for the exploration of natural gas deposits estimated to have a value of \$2 billion.</i></p>
<p>8.03 Ensure the Ministry of Water, Land and Air Protection provides clear standards on energy emissions from all sources.</p>	<p>Policy Action #25 Provincial processes for environmental assessment, water licensing and waste permitting are being streamlined. Policy Action #26 To allow for a fair evaluation of coal-fired electricity projects, final emission standards will be adopted for coal-fired power plants.</p>	<p><i>The Ministry of Water, Land and Air Protection has launched a broad review of the 20-year-old Waste Management Act. The review process, which will take approximately 18 months to complete. The Ministry of Water, Land and Air Protection will adopt guidelines for coal-fired power plants by January 1, 2003.</i></p>
<p>8.04 Strengthen the BC Utilities Commission, a key regulatory agency for energy in the province. This requires significant changes to regulatory practice, with a much greater reliance on a results- based and performance-based regulatory framework. A complete rewrite of the BC Utilities Commission Act is required.</p>	<p>The Policy Action #12 The structure of the BC Utilities Commission, and its mandate in regulating BC Hydro and other energy distributors, will be strengthened. Policy Action #5 The BC Utilities Commission will once again regulate BC Hydro rates.</p>	<p><i>The energy plan adopts the task force's recommendation. The Utilities Commission Act will be updated and amended as needed to implement the plan.</i></p>
<p>8.05 Strengthen the B.C. Oil and Gas Commission and use it as a model for developing a single-window-permitting agency for energy.</p>		<p><i>The B.C. Oil and Gas Commission's service plan has identified a number of initiatives to develop a single-window-permitting agency for 95% of the oil and natural gas sectors permitting requirements.</i></p>
<p>8.06 Strengthen the BC Environmental Assessment Office and review process. This requires greater results-based practice. It also requires greater harmonization of process with the federal government and this should be accomplished by improving the Canada-British Columbia Agreement for Environment Assessment Cooperation that is currently under negotiation.</p>	<p>Policy Action #25 Provincial processes for environmental assessment, water licensing, and waste permitting are being streamlined.</p>	<p><i>Reformed environmental assessment legislation was introduced in the spring 2002 session of the Legislature and will be promulgated by the end of 2002.</i></p>
<p>8.07 Resolve the difficulties investors are having with the Department of Fisheries and Oceans. This will require joint federal/provincial action at the highest levels.</p>		<p><i>The B.C. Oil and Gas Commission has developed a strategy to establish a close working relationship with the Department of Fisheries and Oceans.</i></p>
<p>8.08 Provide provincial standards for air emissions and thereby avoid duplication and confusion at the local level.</p>	<p>Policy Action #24 Provincial processes for environmental assessment, water licensing, and waste permitting are being streamlined.</p>	<p><i>The Ministry of Water, Land and Air Protection has launched a broad review of the 20-year-old Waste Management Act. The review process, which will take approximately 18 months to complete.</i></p>
<p>8.09 Encourage regulators to undertake greater public dialogue and debate with stakeholders and consumers, recognizing that education is the best means to facilitate energy conservation and consumer choice.</p>	<p>The Policy Action #12 The structure of the BC Utilities Commission, and its mandate in regulating BC Hydro and other energy distributors, will be strengthened.</p>	<p><i>The energy plan adopts the task force's recommendation.</i></p>

APPENDIX 2: B.C. Energy Snapshot

GEOGRAPHIC CONTEXT

The majority of B.C.'s current energy supplies are located in the Northeast and Southeast. Oil and natural gas production presently comes from a portion of the Western Canada Sedimentary Basin that extends into northeastern B.C. There are unexplored basins in the Interior and Northwest, on Vancouver Island, and offshore. Recently, very large unproven natural gas reserves, methane hydrates, were reported off western Vancouver Island.

Hydroelectric resources are concentrated on the Peace River in northeastern B.C. and the Columbia River in the southern Interior. Other hydroelectric and thermal power plants are located in the Lower Mainland and on Vancouver Island and the Mid-coast. Some potential alternative energy resources are more focused in coastal areas (e.g., tidal and wind), while others, such as small hydro and wood residue, are scattered throughout B.C.

The province's richest coal deposits are found in the Rocky Mountains in its extreme southeast corner. Additional production occurs in the Northeast and on Vancouver Island, with a promising coalfield (Hat Creek) in central B.C. Coalbed methane deposits have been identified in the Northeast, Southeast, Interior and on Vancouver Island.

Many of our resources are located far from provincial demand centres and export markets. This means long distances over rugged terrain for high-voltage power lines, oil and gas pipelines and rail shipments of coal.

B.C. SUPPLY

B.C. is a major producer of coal, natural gas, hydroelectricity, and oil. While electricity represents approximately 38 percent of the value of the energy sector, it makes up only 11 percent of total primary energy production. Most (80 percent) of the energy produced comes from coal and natural gas, due to B.C.'s endowment of these resources.

An extensive energy production network comprises more than 100 power plants, over 3,700 producing oil and gas wells, 29

gas processing plants, two petroleum refineries, and eight coal mines. There are 18,000 kilometres of power transmission lines, 300 substations, and 80,000 hectares of right-of-way involved in bringing B.C. electricity to market. Approximately 24,000 km of gas-gathering and transmission lines connect natural gas producers and provincial consumers. Another 2,500 km of pipelines carry oil and natural gas liquids to refining facilities within and outside the province.

B.C. CONSUMPTION

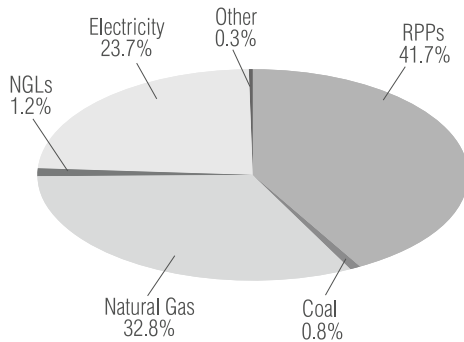
Refined petroleum products (RPPs), such as gasoline, diesel, and heating oil, account for the largest share (42%) of B.C. energy consumption, followed by natural gas and electricity. Most of these RPPs are used in transportation, which makes up 37 percent of total energy consumption and is one of the fastest growing consuming sectors. The industrial sector, on the other hand, accounts for the largest share of natural gas (44%) and electricity (49%) consumed, reflecting the energy intensity of BC industry. Although coal represents about 46 percent of primary energy produced, very little of that production is consumed in BC.

TRADE AND CONNECTIONS

B.C. exports energy to markets in Canada, the US, Asia, Europe, and Central and South America. Virtually all coal produced is destined for outside markets, while about 55 percent of natural gas is exported. Although BC Hydro is generally in demand/supply balance, it becomes a net exporter of electricity during high water inflow years. A net energy exporter overall, B.C. also imports refined petroleum products and, at times, electricity as part of our trading activities.

The Duke Energy natural gas pipeline connects with the US Pacific Northwest at Sumas, Washington. Among other facilities, the Alliance Pipeline delivers natural gas to the US Midwest and the Southern Crossing Pipeline brings Alberta gas to the Interior. BC Hydro's transmission interconnections with the US provide a transfer capacity of 1,230 to 3,150 MW south and 2,000 MW north. The Alberta links can deliver 400 to 800 MW east and up to 700 MW west.

ENERGY CONSUMPTION BY FUEL - 2000



B.C. utilities participate in US and Alberta wholesale power markets. They do so to take advantage of lower cost electricity, augment their generation during low water inflow years, and sell any surplus energy. BC Hydro has developed an active trading business in these markets by using its flexible hydroelectric plants and an ability to time water releases from reservoirs. By reducing electricity production from dams and importing electricity during low price periods, it can increase production and export during high price periods, while still meeting domestic needs.

INDUSTRY STRUCTURE

BC Hydro, a provincial Crown corporation, owns and operates 80 percent of BC's 14,000 MW of dependable generating capacity. It accounts for more than 90 percent of annual electricity production. The balance is divided among Columbia Power Corporation, Aquila Networks Canada, Alcan, Teck Cominco Limited, self-generators, and independent power producers. Another eight municipal utilities purchase from Aquila Networks Canada and BC Hydro and distribute power in their local areas. Other investor-owned utilities include Hemlock Valley Electrical Services, Princeton Light and Power, Yoho Power and Yukon Electrical Company.

Private ownership characterizes fossil fuel industries. About 200 oil and gas companies and about half a dozen of coal companies presently operate in the province. Duke Energy Corporation (formerly Westcoast Energy Inc.) owns and operates the major natural gas pipeline from the Northeast to Vancouver. Three distribution utilities - BC Gas, Centra Gas and Pacific Northern Gas - and various gas marketers and brokers deliver natural gas to provincial consumers.

REGULATION

The BC Utilities Commission regulates energy utilities and reviews and approves rates and new facilities. BC Hydro was effectively taken out of BC Utilities Commission regulations as a result of the rate freeze in 1996 and ministerial exemptions of BC Hydro's projects.

Provincial and federal environmental assessment processes are used to review major energy development projects. The National Energy Board (NEB) regulates energy exports, while the Department of Fisheries and Oceans has jurisdiction over fish and fish habitat in the ocean and some inland waters. The B.C. Oil and Gas Commission regulates all oil and gas activities, including exploration and development, production, processing and storage.

Energy policy is the responsibility of the Ministry of Energy and Mines, which also has a role in government's direction to BC Hydro. The Ministry of Water, Land and Air Protection sets requirements for water quality, waste management (including air emissions) and wildlife, while the Ministry of Sustainable Resource Management oversees land and water use management and pre-tenure planning. The Greater Vancouver Regional District also has delegated authority for air emissions permitting and other environmental matters. In addition, local governments influence the siting of energy facilities through official community plans and zoning bylaws.

PRICING

For all energy production other than electricity, prices are determined in regional (natural gas) or international (oil and coal) commodity markets. The NEB regulates rates for interprovincial and international pipelines. Instead of traditional cost-of-service regulation, it now encourages the use of negotiated settlements among the parties involved.

The BC Utilities Commission regulates rates for natural gas distribution and electricity to ensure that they are just and reasonable and do not discriminate between customers. Regulated utility rates blend the cost of new with existing energy supplies. Most rates are flat, charging the same price per unit of energy no matter how much consumers use. They are also postage stamp, so that the price does not vary from one location to another.



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