

## 10. Ensure self-sufficiency to meet electricity needs, including “insurance”.

The Province wants to ensure that British Columbia has the reliable made-in-BC supply it needs to meet the growing demand for electricity, and that new resource acquisition is planned in a way that recognizes the long lead time and implementation risks associated with new power projects, and the challenges of forecasting future needs. In particular, for BC Hydro, the Province wants to ensure that BC Hydro has enough BC-based power at all times, even in low water years, to meet its customers’ electricity needs. Therefore, after implementing all cost-effective energy conservation opportunities, BC Hydro will acquire sufficient BC-based resources by 2016 so that BC Hydro can meet its customers’ needs even under critical water conditions. By 2026, BC Hydro will acquire 3,000 gigawatt hours of supply on top of their firm energy requirements (the energy required to meet customer needs under critical water conditions) and capacity resources needed to effectively integrate this energy in a cost-effective manner. The Province recognises the ongoing importance of trade for maximising the value of BC Hydro’s heritage resources and for optimising its system, and this activity will continue. The British Columbia Utilities Commission will continue to have responsibility for regulating BC Hydro, within the context of the self-sufficiency requirement.

## 11. Establish a standing offer for clean electricity projects up to 10 megawatts.

The Province wants to facilitate the development of distributed clean electricity generating projects in British Columbia to support its goal of self-sufficiency and help promote B.C. innovation. The Province is concerned about the size of the administrative burden for small project proponents to bid on BC Hydro calls. For this reason, this policy directs BC Hydro to develop a program, in consultation with stakeholders, to purchase, continuously or in regular offer windows, electricity from projects with a capacity of 10 MW or less. The Standing Offer will allow small projects to sell power to BC Hydro at a fixed price and with standard contract terms and conditions. A Standing Offer Program would be in addition to planned Calls for Power from larger projects. The Program design will be subject to the review and approval of the BCUC.

The Province has established the following general principles to guide the design of the Program:

- Simplify the process, contract terms and conditions for small power projects in BC;
- Competitive pricing for these projects relative to other supply sources; and
- Ensure cost-effectiveness, transparency, and fairness of the Program.

Some specific design guidelines are as follows:

- Except for local safety and security reasons, there should be no quota initially for the Standing Offer program.
- The product should be contractually non-firm energy.
- Proponents should not be required to pay a deposit for the Standing Offer program, although BC Hydro may establish other eligibility and security requirements, subject to approval from the BCUC. BC Hydro may also limit the maximum length of time a proponent has between receiving a contract and commercial operating date (COD).
- Transmission or distribution connected projects of 10 MW or less, and either clean, renewable or co-generation with an overall efficiency (heat and electricity production) in excess of 80 per cent will be eligible for the program.
- BC Hydro will absorb transmission / distribution network upgrade costs for individual projects subject to a cap established in consultation with stakeholders and approval from the BCUC, after which project proponents may be required to pay for additional network upgrade costs.

- The price should be transparent, simple, and based on the most recent call results and updated regularly, but not more than annually.
- BC Hydro will retain any rights and incentives associated with the green attributes, as well as any credits associated with greenhouse gas emissions (GHG). The clean or alternative electricity acquired will contribute to maintaining the Province's standard of having 90 per cent of BC's electricity generated being clean or renewable.

In addition, to ensure even treatment of new supply acquired through BC Hydro's net metering program and the Standing Offer approach, Government will issue a direction to the Commission that BC Hydro makes appropriate changes to its net metering program. This will ensure the price paid for net annual surpluses of generation 'purchased' by BC Hydro is generally consistent with the prices paid in the Standing Offer program.

## **12. The BC Transmission Corporation is to ensure that British Columbia's transmission technology and infrastructure remains at the leading edge and has the capacity to deliver power efficiently and reliably to meet growing demand.**

The BC Transmission Corporation's investments in advanced control and monitoring technologies increase the capacity of existing assets by enabling more precise operation of the transmission system. By taking a broader and more progressive approach to transmission planning, BCTC will also be able to ensure that new transmission infrastructure will be in place to reliably meet the province's future electricity needs.

Since its inception, BCTC has planned system upgrades and new transmission projects in response to a customer's request. Transmission projects, however, require longer lead and construction times than generation or load build. The experience of other jurisdictions with this type of planning approach is that transmission capacity is often not in place when it is needed.

To prevent this situation from occurring in British Columbia, BCTC will move beyond this contract driven approach to an approach that builds infrastructure in advance of need. The BC Transmission Corporation will study and propose, where appropriate, system upgrades or expansions based, in part, on its own assessment of future market needs. Three types of transmission projects will benefit from this approach:

- a planned system upgrade for a Network Customer already identified in the BCTC Capital Plan that can be beneficially advanced in time;
- a system upgrade required for a customer that can beneficially be made larger than the immediate requirement; and
- a project that BCTC identifies as having future benefits, but which has not been triggered by a customer request.

BCTC will identify this third type of project through an annual project review designed to identify possible projects that would be viable as a BCTC led investment.

BCTC will only proceed with an upgrade or expansion project after completion of a strong business case that identifies the costs and benefits of the proposed project, completion of thorough stakeholder and First Nation consultations, and receiving all necessary regulatory approvals.

**13. Ensure adequate transmission system capacity by developing and implementing a transmission congestion relief policy.**

The congestion-relief policy will support the priorities of energy security and self-sufficiency by ensuring full and adequate transmission infrastructure is available at all times, and across all regions, of BC's electricity grid.

By implementing a congestion-relief planning regime, and by designating specifically-defined infrastructure projects as congestion-alleviating, Government will ensure that BC's transmission system is developed in a timely manner, is able to support optimum energy security and economic growth, and BC Hydro achieves electricity self-sufficiency. Specifically-defined infrastructure projects will ensure a transmission system robust enough to support the most efficient use of generation resources from a province-wide perspective.

Government will work with BCTC to create and implement the congestion-relief policy. This policy will guide transmission system planning on the basis of cost-effectively removing existing system congestion and constraints, and maintaining that state. This will be accomplished through specifically-defined transmission infrastructure upgrades or expansions, planned from the perspective of meeting and maintaining an un-congested system. This stands in contrast to the current regime of project planning based on specific customer-driven requirements, or opportunities identified through BCTC's current Expansion Policy. The policy will define the specific approach to identifying congestion-relieving priority projects.

Other jurisdictions have employed similar policies designed to get congestion out of a system. For example, Alberta has policies requiring zero congestion and transmission solutions. The United States has passed legislation (*as part of the Energy Policy Act*), to permit the Federal Energy Regulatory Commission to solve persistent and damaging congestion.

**14. Ensure that the province remains consistent with North American transmission reliability standards.**

Government will commit to ensure that industry developed reliability standards are introduced in British Columbia, cost-effectively and in a manner that respects BC's regulatory sovereignty.

The analysis of recent large-scale electricity blackouts has confirmed the value of common and mandatory reliability standards for the electricity industry. New North American standards are emerging from the North American Electric Reliability Council, an industry body made up of technical experts from Canada and the United States. British Columbia will follow the industry practice of making these common standards mandatory for users, owners, and operators of the bulk power transmission system in BC. Consultations with industry will be undertaken to discuss the options for BC to implement these standards.

The BC Utilities Commission will determine, set and enforce reliability standards in the province, and can approve variances if it determines that a variance is appropriate. This approach is consistent with steps taken by other Canadian jurisdictions.

**15. Continue public ownership of BC Hydro and its heritage assets, and the BC Transmission Corporation.**

The BC Energy Plan upholds and confirms the 2002 Energy Plan's fundamental principle of public ownership of BC Hydro, its heritage assets, and the BCTC.

Under the 2002 Energy Plan, the government passed the *BC Hydro Public Power Legacy and Heritage Contract Act* to ensure continued public ownership of BC Hydro and its heritage assets, including BC Hydro's generation, distribution and transmission systems. While BC Hydro retains ownership of the transmission system, the *Transmission Corporation Act* dealt with the transfer of transmission operation, management and planning responsibility to BCTC. The *Transmission Corporation Act* included the stipulation that BCTC must be 100 per cent owned by government and cannot be sold.

These protections remain in place to continue to ensure public ownership of these corporations and assets.

**16. Establish the existing heritage contract in perpetuity.**

The 2002 Energy Plan recognized that BC Hydro's heritage assets represent valuable provincial assets yielding a substantial return for BC Hydro ratepayers in the form of low cost electricity generation. Energy Plan 2002 included policy actions to secure that benefit.

The *BC Hydro Public Power Legacy and Heritage Contract Act* provided enabling legislation to allow Government to require a "Heritage Contract" ensuring the electricity generated by the heritage assets continues to be available to BC Hydro ratepayers based on cost of service. The Heritage Contract ensures BC Hydro ratepayers receive heritage power that are based on costs of generation, not market prices. The Heritage Contract was implemented by the Heritage Contract Special Direction #2.

The Heritage Contract includes a provision stating the Contract may be terminated with 5 years notice if notice is given any time after April 1, 2009. While no official 'end date' to the Heritage Contract exists, the language of the contract implies the potential for termination and thus creates uncertainty. Government will re-affirm and strengthen its commitment to the Heritage Contract through amendments addressing this uncertainty.

**17. Invest in upgrading and maintaining the heritage asset power plants and transmission lines to retain the ongoing competitive advantage these assets provide to the province.**

Thanks to the valuable investment made in heritage assets by previous generations of British Columbians, BC Hydro ratepayers today reap substantial benefits from this low cost, reliable, flexible electricity system.

As with Energy Plan 2002, BC Hydro will continue to pursue efficiency improvements and upgrades to its existing assets under its 'Resource Smart' program. In addition, BC Transmission Corporation will continue to plan for enhancements required to support the transmission system. The British Columbia Utilities Commission will continue to oversee the resource plans of these utilities and approve the projects it deems to be cost effective and in the public interest.

**18. All new electricity generation projects will have zero net greenhouse gas emissions.**

Currently, electricity accounts for only a small portion (around 3 per cent in 2004) of the province's overall GHG emissions. This Energy Plan maintains the low greenhouse gas intensity of the electricity sector.

In The BC Energy Plan, government commits that all new natural gas or oil fired electricity generation projects developed in BC and connected to the integrated grid will have zero net GHG emissions. This means that the proponents of these generation projects would have to invest in other initiatives that would completely offset the GHG emissions generated by these projects, unless the technology was available to eliminate or capture and store the emissions from the plant.

The cost of this measure will depend on the province's offset policy, which will be developed over the next several months. The Ministry of Environment, in consultation with MEMPR, will be responsible for leading the development of the offset policy, as well as all necessary regulatory and legislative changes. The policy may include the option of contributing to the Innovative Clean Energy Fund as an alternative to investing in offset projects.

**19. Zero net greenhouse gas emissions from existing thermal generation power plants by 2016.**

To ensure consistent treatment between new and existing generation projects, while allowing time to plan for this change, The BC Energy Plan commits that by 2016, all existing natural gas and oil fired electricity generating facilities in the integrated grid will need to completely offset their GHG emissions.

**20. Require zero greenhouse gas emissions from any coal thermal electricity facilities.**

The BC Energy Plan stipulates that coal-fired generation must meet a zero emission standard, through a combination of "clean coal" fired generation technology, carbon sequestration and offsets for any residual GHG emissions. Through technology that allows the carbon dioxide to be captured from the plant and "stored", coal fired generation can have 'near zero' GHG emissions. There is considerable investment, both nationally and internationally, in the development of this technology, which many believe will be commercially available in the next decade.

**21. Ensure clean or renewable electricity generation continues to account for at least 90 per cent of total generation.**

Currently in BC, about 90 per cent of electricity is from clean or renewable resources. Under The BC Energy Plan, Government commits to maintain this high standard – which places us among the top jurisdictions in the world. Government will issue guidelines to define what sources qualify as clean or renewable, and will provide additional policy guidance and directions, as needed, to ensure BC continues to meet this standard.

**22. Government supports BC Hydro's proposal to replace the firm energy supply from the Burrard Thermal plant with other resources. BC Hydro may retain Burrard for capacity purposes after 2014.**

As a part of its Integrated Electricity Plan, BC Hydro has a plan to replace the firm energy from Burrard Thermal by 2014. The proposed approach by BC Hydro is consistent with Government's desire to see Burrard Thermal phased out. The government recognizes that the value of the capacity and voltage support provided by Burrard Thermal may warrant continuing to keep Burrard Thermal available if needed for peaks in demand (for example, resulting from cold winter weather, Christmas lighting, to deal with other resources being unexpectedly unavailable, etc.). These may continue to be appropriate longer term roles for Burrard if that Burrard Thermal continues to be a cost effective voltage support and capacity resource.

**23. No nuclear power.**

British Columbia's 2002 Energy Plan had environmental responsibility and no nuclear power sources as one of its cornerstones. The BC Energy Plan continues the Province's commitment that nuclear power is not a part of BC's energy future. The financial and environmental problems experienced in other jurisdictions that have invested in nuclear power continue to make it a risky proposition. The government rejects nuclear power as a strategy to meet British Columbia's future energy needs.

**24. Review BC Utilities Commission's role in considering social and environmental costs and benefits.**

The BC Energy Plan explicitly recognizes that low costs means more than least financial costs. Environmental, social and economic development objectives of the province are also values that need to be considered in determining whether utilities' plans and programs serve the public interest. Some stakeholders argue that the BC Utilities Commission does not take full consideration of this broader perspective when regulating utilities. Others argue that environmental, social and environmental policy properly rests with the province, and not the regulator.

A policy action of The BC Energy Plan is to review the BC Utilities Commission's role in considering social, environmental and economic costs and benefits as a part of its regulatory framework.

**25. Ensure the procurement of electricity appropriately recognizes the value of aggregated intermittent resources.**

BC Hydro, with stakeholder input, will develop an approach to allow for the recognition of any additional value associated with intermittent clean or renewable energy projects including portfolio benefits, for the purposes of evaluating these generators' capacity and firm energy output in its energy calls and acquisition processes. Intermittent resources are those for which the 'fuel' supply to the generator (e.g. the wind or the water flow) is not always available and cannot be 'ordered' when needed.

BC has substantial potential to develop green resources such as wind and small-hydro, and doing so is an objective of The BC Energy Plan. The intermittent, seasonal and non-dispatchable nature of these resources tends to make their output less valuable compared to the output from coal, natural gas, or biomass-fired plants that can generate on a consistent basis or can be dispatched or displaced based on short-term demand and market conditions. Wind and run of river small-hydro generators also provide a less valuable product individually than do large hydro facilities with storage, since these large hydro facilities combine flexibility benefits with the "firmness" attributes of thermal generation resources. Finally, there are challenges to manage and integrate intermittent resources into the electricity delivery system that can require study (and related costs) and potentially additional infrastructure costs.

However, when the combined output from a portfolio of clean or renewable resources is considered, there may be advantages associated with the diversification of these resources that could increase the value of their combined output relative to when their outputs are considered individually. For example, the overall firmness (predictability) of a diverse portfolio of intermittent resources may be higher than the firmness of individual resources within the portfolio, especially if the output of the resource portfolio is composed of different types of resources and/or resources from different regions. When intermittent generators are viewed in this aggregated way, their value may be higher. Any net increase in value should be reflected in the choices made by BC Hydro when determining which resources are required to meet its needs, and in determining how to value these resources.

This policy is in no way intended to give preference to intermittent resources or establish a pre-defined target for intermittent energy. It is simply intended to ensure a level playing field among different resource types in order to reduce the overall cost to ratepayers of meeting growing demands and standards for clean or renewable electricity.

**26. Work with BC Hydro and parties involved to continue to improve the procurement process for electricity.**

BC Hydro's energy procurement plays a critical role in the reaching Government's self-sufficiency objective, as well as meeting the Government's objects for competitive rates, clean or renewable electricity, the development of a vibrant and competitive IPP sector and other fiscal and provincial policy objectives. As such, it is important that all parties – IPPs, BC Hydro, BC Hydro's customers who pay the costs through their rates, and the BC Utilities Commission – are satisfied that the approach used by BC Hydro, and the terms and conditions in BC Hydro's power purchase contracts, meet the objectives set out in this policy.

BC Hydro's efforts to design call processes must take into account the diversity of potential resource types available in British Columbia (small, large, firm intermittent, conventional and alternative) and the multiple issues that are related to or can affect policy objectives. These include penalties for non-performance, risk allocation, pricing, contract length and renewability provisions.

In addition, not all projects will necessarily fit into a call for power type process. BC Hydro needs the flexibility to utilize different procurement approaches so that it is able to acquire new supply in the most appropriate manner. However, given a call process is a transparent, competitive process, the prices, terms and conditions of these call processes serve as a useful guide to BC Hydro in its acquisition of resources through the standing offer and net metering, bilaterally negotiated contracts, request for proposals and other processes.

Under the current regulatory process, the Commission is able to evaluate BC Hydro's procurement approach before the fact under its general authority, and it can reject BC Hydro's tender results and/or contract terms after the fact in approving contracts under Section 71 of the *Utilities Commission Act*.

To ensure the procurement processes are consistent with provincial energy policy, the Ministry of Energy, Mines and Petroleum Resources (MEMPR) will continue to participate in the discussions regarding the design of BC Hydro's procurement processes, and will be able to respond more promptly to any policy issues that arise. In addition, MEMPR will consider if regulatory or other changes are advisable.

MEMPR's engagement will add certainty and stability to BC Hydro's call processes by ensuring they are consistent with energy policy objectives. The goal is to establish a transparent and well-understood regulatory regime for reviewing BC Hydro's procurement processes, both before and after the fact.



**27. Pursue BC Hydro's planned Remote Community Electrification Program to expand or take over electricity service to remote communities in British Columbia.**

There are approximately 50 permanent remote communities in BC that are self-reliant or reliant on a third party for electric power; the vast majority of these are First Nations communities. For many of these communities, electricity service is characterized by sub-standard reliability, provided by ageing assets that are poorly maintained and highly inefficient, and creates significant environmental risks related to diesel emissions and fuel handling.

Over the next 10 years, BC Hydro will pursue its remote community electrification program (RCE) to expand its service to remote communities that meet specific criteria and that are seeking service from BC Hydro. Service to these communities will be provided under BC Hydro's Zone 2 tariff. (The Zone 2 tariff is used to service BC Hydro's existing Non-Integrated Areas.) Costs will be recovered from currently-responsible agencies - such as the Department of Indian and Northern Affairs - and BC Hydro ratepayers.

**28. Ensure BC Hydro considers alternative electricity sources and energy efficiency measures in its energy planning for remote communities.**

Remote communities and Non-Integrated Areas tend to rely on diesel generation for electricity supply with high operating costs. Given the environmental and economic issues associated with this type of generation, the business and social case for pursuing clean electricity and energy efficiency solutions in remote communities is much stronger than in other areas of the Province. These solutions should not be overlooked when considering service options for remote communities.

BC Hydro will work with the Ministry of Energy, Mines and Petroleum Resources (MEMPR) to develop community energy plans (CEP) prior to extending service to remote communities under its Remote Community Electrification program. In addition, BC Hydro will develop community energy plans when it is considering renewal or replacement of diesel generators in Non-Integrated Areas, or in other circumstances where unique opportunities are evident. CEPs will consider all cost-effective solutions to meet the electricity needs of the remote community, including energy efficiency, alternative energy solutions and integration with the main grid. In addition, the CEPs will seek to integrate with plans for skills training and local economic development opportunities.