29. Establish the Innovative Clean Energy Fund to support development of clean power and energy efficiency technologies in the electricity, alternative energy, transportation, and oil and gas sectors.

Government support for the advancement of energy technologies through the pre-commercial development stage can play a critical role in their early and successful uptake by the marketplace. British Columbia will take a leadership role in advancing innovation in its energy technology sectors, both conventional and emergent, through the establishment of an Innovative Clean Energy Fund.

The Fund will be administered by the Ministry of Energy, Mines and Petroleum Resources with the input and advice of an industry-government advisory body.

Projects supported by the Fund will:

- Address specific British Columbia energy and environmental problems that have been identified by government
- Showcase BC technologies that have a strong potential for international market demand in other jurisdictions because they solve problems that exist both in BC and other jurisdictions
- Support pre-commercial energy technology that is new, or commercial technologies not currently used in British Columbia
- Demonstrate commercial success for new energy technologies.

The development process of new technology evolves through many different phases, and the type of support needed in each phase varies significantly. For example, emerging technologies in the basic research, development and demonstration phases (e.g., fuel cells and wave / tidal energy) may need partnerships among industry, academia and government to help fund the necessary work to carry them to commercialization. Other examples include technologies that are already commercial but require more widespread adoption (e.g., wind energy). These technologies may require other types of assistance, such as the dissemination of information and technology transfer, or government taking leadership in applying the technologies in government operations. Lastly, those technologies with developed markets (e.g., fossil fuels and hydropower) may require sustained private sector investment in order to support local manufacturing and maintain employment levels.

Examples of energy resources, technologies and systems that may be considered under the Fund include:

- Renewable resources (e.g., biomass; ocean/hydro, solar, wind, geothermal)
- Improvements in the development and use of non-renewable resources (i.e., conventional and unconventional oil and natural gas)
- Energy carriers and storage (e.g., hydrogen, fuel cells)
- Gasification
- Carbon capture and sequestration
- Emissions management
- Energy systems integration
- Power measurement and management
- Energy efficiency and conservation
- Transportation (e.g., engine, vehicle and alternative fuel technologies)
- Fuels (e.g., biodiesel and ethanol)
- Waste energy capture and utilization

30. Implement a provincial Bioenergy Strategy which will build upon British Columbia's natural bioenergy resource advantages.

British Columbia is blessed with significant biomass resources such as woody debris, agricultural crop residues, animal manure and organic municipal wastes that can be used to produce heat, electricity, liquid fuels and other forms of energy. These resources are renewable, well-distributed throughout the province, and suitable for either large-scale or smaller, community-based energy production opportunities. Wood pellet production, wood-fired electricity generation and cogeneration are already well established in British Columbia, with wood gasification, liquid biofuel production and other bioenergy/biorefining technology also well positioned to play a significant role in British Columbia's energy future.

The provincial Bioenergy Strategy, which builds upon The BC Energy Plan and other provincial initiatives, will help advance British Columbia's bioenergy development opportunities in the near- mid- and long-term, while also promoting diversity and competitiveness in the province's forestry and agriculture sectors, and strengthening regions and communities throughout the province.

31. Issue an expression of interest followed by a call for proposals for electricity from sawmill residues, logging debris and beetle-killed timber to help mitigate impacts from the provincial mountain pine beetle infestation.

British Columbia has an abundance of underutilized wood residues, in the form of sawmill residues, logging debris and a growing supply of timber killed by the Mountain Pine Beetle (MPB) that will become less usable for conventional forest products over time. While British Columbia currently leads the nation in wood energy production and consumption, with about 50 per cent of Canada's biomass electricity generating capacity, it is estimated that about 1.2 million bone-dry tonnes (BDt) of mill residues per year are incinerated in beehive burners in the province with no energy recovery and adverse impacts on local air quality. There are about seven million BDt per year of logging residues in the Central Interior, and recent estimates indicate that the Mountain Pine Beetle infestation has already killed over one-third of the merchantable pine volume in the province. It is further estimated that 80 per cent of the merchantable pine will be dead by 2013, with the bulk of that damage (75 per cent) occurring before 2010. Estimates of non- recoverable losses vary between 200 and 500 million cubic meters, which equates to roughly 400 million to 1 billion BDt. These resources, and abundant wood residues in other regions throughout the province, present a significant opportunity for increased bioenergy production in British Columbia.

In order to encourage greater development and use of "home-grown," wood-fired electricity in the province, and to help address the MPB emergency and capture value from the affected timber, the government will instruct BC Hydro to issue an expression of interest followed by a call for proposals for electricity generated from wood residue and MPB timber. The terms of the call will be developed by BC Hydro in consultation with the Ministry of Energy, Mines and Petroleum Resources and the Ministry of Forests and Range, with input from the forest and energy sectors.

32. Implement a five per cent average renewable fuel standard for diesel by 2010 to help reduce emissions and advance the domestic renewable fuel industry.

In Spring 2006, the federal government announced its intention to proceed with a two percent national average renewable fuel standard (RFS) in Canada's diesel fuel no later than 2012. British Columbia will move beyond the federal RFS by adopting a five per cent biodiesel requirement in provincial diesel fuel supplies by 2010.

33. Support the federal action of increasing the ethanol content of gasoline to five per cent by 2010, and adopt quality parameters for all renewable fuels and fuel blends that are appropriate for Canadian weather conditions in cooperation with North American jurisdictions.

In Spring 2006, the federal government announced its intention to proceed with a five per cent average national renewable fuel standard (RFS) in Canada's gasoline by 2010, and a two per cent national average RFS for Canada's diesel fuel no later than 2012. British Columbia is supportive of the national RFS to help reduce transportation-related air emissions and advance the renewable fuel industry in Canada, and will move beyond the federal RFS by adopting a five per cent biodiesel requirement in provincial diesel fuel supplies by 2010.

The Council of Energy Ministers (CEM) Renewable Fuels Working Group was established in September 2000 to advance the development and use of renewable fuels in Canada. This group, comprised of federal, provincial and territorial government officials, works together and in consultation with industry and other stakeholders to:

- Address issues such as closing information gaps and phasing out inter-provincial trade barriers;
- Coordinate existing and future programs to avoid inefficiencies;
- collectively address competitiveness issues with the United States and other jurisdictions;
- Encourage cooperation and economies of scale for next-generation technology commercialization; and
- Facilitate policy work among jurisdictions.

British Columbia will continue to represent its interests at the CEM Working Group and help to implement the federal RFS in British Columbia by 2010.

Critical to the reliability and acceptance of renewable fuels in Canada is the adoption of fuel quality parameters for renewable fuels and fuel blends. Currently, requirements for biofuels to respect recognized product quality standards are not mandated; however, generally accepted production and procurement standards exist. Two standards generally accepted in North America are:

- ASTM D6751 - the American standard that covers pure biodiesel (B100), for blending with petrodiesel in levels up to 20 per cent by volume; and
- CGSB for B1 to B5 - the Canadian General Standards Board set a biodiesel standard for biodiesel blends between one and five per cent.

Adherence to regulated quality parameters will provide both consumers and petroleum companies with the confidence required to purchase and distribute biofuels. This is especially important for biodiesel and biodiesel blends. In the case of biodiesel, there are several technical requirements that must be addressed in blending, transport, and distribution in order to provide a fuel with uncompromised integrity.

34. Develop a leading hydrogen economy by continuing to support the Hydrogen and Fuel Cell Strategy for British Columbia.

British Columbia is a leader in hydrogen and fuel cell technologies – with the largest cluster of companies in Canada. The sector employs around 1,200 people in British Columbia. In 2003, Premier Gordon Campbell announced "Our goal is to develop the hydrogen and fuel cell sector to make British Columbia the world's leading hydrogen economy by 2020". The primary vehicle to achieve this goal is the British Columbia Hydrogen and Fuel Cell Strategy. The Strategy is an industry initiative, which seeks to accelerate the demonstration, deployment and commercialization of hydrogen and fuel cell technologies. The unifying vision of the strategy is the Hydrogen Highway initiative. In March 2005, British Columbia provided a $2 million grant to industry, which is administered by Hydrogen and Fuel Cells Canada. More than $110 million in investment activity in hydrogen and fuel cells in British Columbia has been announced since the award of this grant, including more than $30 million in federal funding.

35. Establish a new, harmonized regulatory framework by 2010 for hydrogen by working with governments, industry and hydrogen alliances.

Hydrogen technology has the potential to offer tremendous economic and environmental benefits for British Columbia. British Columbian companies have established a global market presence and Canadian hydrogen demonstration projects are being watched by international observers and consortiums. The "Hydrogen Highway" will be showcased during the upcoming 2010 Olympic and Paralympic Winter Games.

British Columbia is recognized as a North American expert in hydrogen regulatory frameworks. Regulatory reform leadership is needed to remove trade barriers and offer industry transparency. A new, harmonized regulatory framework will be developed to promote the emerging hydrogen economy and enable British Columbia's industry to maintain its competitive edge in the global market. Key actions to establish a regulatory framework for hydrogen include:

- Determine how existing and future regulations apply for hydrogen products;
- Determine appropriate codes and standards;
- Link legislative areas across different jurisdictions; and
- Hold stakeholder workshops.

The Province will work with Canadian jurisdictions and international participants (e.g., International Standards Organization, International Electro-Technical Commission and the UN / Global Technical Regulations) towards a harmonized framework.