## ECACEP Scenario – Big Green

### Planning Factor: Energy Future

- **Alberta becomes a consumer rather than a producer of energy**

### Theme: Energy – Towards Carbon Free

<table>
<thead>
<tr>
<th>Force/ Driver</th>
<th>Scenario Assumptions (developed by workshop participants)</th>
<th>Forces/drivers/outcomes from Consolidated Report that could support this scenario (developed by workshop participants)</th>
<th>Supportive Information from Topic and Focus papers</th>
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</thead>
</table>
| **Supply – Global Markets** | • Still have oil and gas driving transportation  
• Global scale -Transporting imports/ exports  
• Control of fuel sources in the hands of multi-nationals  
• Multi-nationals control transportation  
• Power base shifting to energy companies in other countries that control renewable sources | • Price for oil and gas drops  
• India and China grow and need more energy  
• Economic downturn as hydro-carbons depleted or replaced (e.g. natural gas reserves around Viking)  
• Reserves decline and alternatives to hydrocarbons are developed  
• Peak oil- costs rise and availability declines – consumption changes | • **Provincial energy strategy:** environmentally responsible and innovative hydrocarbon development will remain the corner stone of Alberta’s economy and North American energy supply. It will also recognize the importance of energy conservation, efficiency and the development of renewable energy sources, as expanding pieces of our provincial energy portfolio.  
• **Situation in East Central Alberta:** has conventional petroleum exploration/development, including heavy oil development and open pit coal mining  
• Oil production peaked in the study area in 1993 and has declined steadily since.  
• There are still 1200 active oil wells in the study area. Oil production may cease by 2034.  
• Gas development peaked in 2006. Production is seasonal and fluctuates widely.  
• Surplus capacity is no longer available in the study area. There are about 2000 wells in the area, increasing by about 250 since the peak, but with corresponding decline in production of individual wells. About 50% of gas reserves remain.  
• There are about 400 coal bed methane wells in 2008 (from none in 2003). Results have been modest. |
| **Geo-political power** | • Concentrating power with corporations.  
• Control of government  
• Really negative impacts  
• Shift of power to environmental technology | • Political forces restrict access to fossil fuels  
• Global demand for distant resources creates power in the hands of the powerful few |  |
| **Supply – Local Markets** | • Cost-effective transportation  
• Solar power – electric cars – hybrids  
• use of cleaner fuels in vehicles locally  
• Inexpensive travel - locally  
• Not good news for Alberta  
• Loss of oil/ gas power/ revenue base | • Alternatives to carbon-based fuels are developed  
• New technologies become more affordable  
• Standardization of products leads to reduced costs  
• Renewable energy is accessible and cheap – electricity is almost free after initial investment | • Coal-fired plants currently make up about 50% of AB total generating capacity.  
• Natural gas accounts for 40%  
• Increasing natural gas price has led to many farms and greenhouse operations to convert their heating to coal.  
• **Low Impact Renewable Energy (LIRE):**  
• About 12% of Alberta’s generating capacity is currently comprised of Renewables (including hydro)  
• Wind – low labour and maintenance cost (available to work 98% of the time) – very reliable.
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<tr>
<th><strong>Price of oil/gas</strong></th>
<th><strong>R&amp;D</strong></th>
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<tbody>
<tr>
<td>• Loss of oil/gas revenue base</td>
<td>• Environmental technology – movement towards renewable change</td>
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<tr>
<td>• Availability of cheap, renewable energies</td>
<td>• Alberta government uses its revenues to catch up with technology innovations occurring elsewhere</td>
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<tr>
<td></td>
<td>• Shift of power to those in control of environmental technology</td>
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<tr>
<td>• Price for oil and gas drops</td>
<td>• Gradual, but consistent shift to new technology</td>
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<tr>
<td>• Demand for Alberta oil, particularly from the oil sands collapses</td>
<td>• New technologies become more affordable</td>
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<tr>
<td>• Gradual but consistent shift from current technology</td>
<td>• Breakthrough energy source that is abundant, renewable, flexible and environmentally neutral</td>
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<td>• Hydro-carbon fuel becomes obsolete</td>
<td>• Increasing funding for R&amp;D</td>
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<td>• Alberta returns to an agriculturally-based economy</td>
<td>• Biosphere concept – (example- waste of one industry becomes asset to another</td>
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<td>• Fossil fuels become uneconomic to produce, creating a drop in Alberta government revenues</td>
<td>• More corporate control of resources</td>
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<td>• Conservation and improved efficiency makes the price of renewable energy sustainable.</td>
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<th>Behaviour</th>
<th>Trade regulations/subsidies</th>
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| • People continue to use more energy world-wide  
• Social demand for change drives increasing use of renewable resources  
• Sustainability is desired and has a high level of public awareness  
• Water conservation attitude is developed  
• Impacts on human health – leads to decrease use of hydro-carbons | • Corporate/multinational control  
| | • Global community, led by US and China, mandate a steep reduction in CO2 emissions  
• Removal of trade barriers to allow new industries and segments of our economy to grow  
• Removal of international tariffs/support systems that lead to inefficiencies |