2002 survey, the site doesn't have the wind resources needed to make the project economically viable under the terms of the company's deal with Hydro. That doubtless made for a tense post-mortem down at Stothert HQ. More than that, however, the episode underscores some prickly realities for those who would see the wind drive a good portion of B.C.'s alternative energy future. Wind as a power source is an easy PR sell: it's free, it doesn't pollute and it's not concentrated in any politically volatile region of the world. Previous studies of the resource in B.C. have upped the volume on the environmental applause meter. They have estimated wind energy reserves from such areas as Port Hardy, Port Alice and Prince Rupert at approximately 4,800 megawatts, a full 1,200 of which, they project, could be harnessed by 2011. With that mega-wattage having the potential to power 100,000 homes per year, attract $1 billion worth of investment and create 8,000 job-years of employment, we're not entertaining penny-ante daydreams here. But - and here's that aforementioned cold rain for the green energy parade - the numbers just don't add up. Wind, for all its seductive candle power, is depressingly distant from being commercially viable in B.C.'s domestic market and even further from that goal in the wider North American energy market, which is crying out for new power sources, especially renewable ones. For one thing, it's available for energy generation between, at best, 30 and 35 per cent of the time. When you consider that the comparable energy capacity of other alternative power sources like geothermal is closer to 100 per cent, wind's appeal drops off rapidly. For another, in B.C. anyway, wind is a long, long geographically challenging way from market. That's hard on logistics and harder still on investors' pocketbooks. The numbers get more daunting the farther along the wind tunnel you get. To make any kind of a commercial go of it, a wind farmer needs to get around $65 per megawatt hour for his energy. Considering that Hydro, which is after the cheapest energy with the most reliable capacity available, can buy power from such sources as Alberta coal generation plants for as little as $8 per mWh, that's a challenge in itself. If the wind farmer wants to send the energy he produces any distance, he'll need to buy time on transmission lines. To send it to market on those lines in B.C. runs around $10 per mWh. To send it down to the voracious California energy market, add in another $12 per mWh. So the B.C. wind farmer is already operating at a significant disadvantage compared with his U.S. counterpart, who also benefits from federal production tax credits and assorted state subsidies. Adding in wind's 35 per cent energy capacity factor, which means the wind producer is paying for transmission line time even when he's not producing energy, pushes the cost of getting B.C. wind to the export market at around $60 per mWh. Unless, you like working for nothing or you have investors keen on reaping no return on investment, the wind, effectively, is out of your sales before you start.

While technology has dramatically boosted wind turbine efficiency over the past 10 years, it will have to advance considerably and the price of energy will have to rise considerably for B.C. wind to have any chance of being commercially viable in this province or anywhere else.Timothy Renshaw (trenshaw@ biv.com) is the editor of Business in Vancouver. His column appears every two weeks.

Small hydro operator plans expansion in Whistler area, *Delta company's run-of-river project on Brandywine Creek now producing millions in revenue,* Business in Vancouver, August 23-29, 2005
Paul Harris

A run-of-river company generating more than $2 million in power via a project near Whistler is planning further expansion to increase the volume of energy it sells to BC Hydro. The Brandywine Creek run-of-river project became "fully operational" in May, almost three years after it secured - under the auspices of Rockford Energy Corp. - a sought-after Hydro contract. The project was recently taken over by Delta's Run of River Power Inc. While delivering power to other utilities in North America is an option, too, "if they're paying the right price you would rather sell it to BC Hydro because it is easier logistically and they are typically longer power purchasing agreements," said Jako Krushnisky, Run of River's president and CEO. Small hydro projects - particularly run of river - have generally been favoured by environmental groups, said Susan Rutherford, staff counsel at environmental watchdog West Coast Environmental Law in Vancouver. Small hydro is not only a clean energy source, but its impacts on the land and watersheds are more easily mitigated, she said. Krushnisky said that friends and family seed money was used five years ago to finance early development at Brandywine, a project 12 kilometres outside of Whistler, to establish the water flow prior to a submission to Hydro. "One of the requirements for a successful application is that you have demonstrated a minimum of actual flow," he said.With initial tests offering encouraging results, an engineer was commissioned to draw up the dimensions of the project. In addition, environmental tests and negotiations with First Nations were undertaken. A contract worth around $50 million over 20 years to supply 7.6 megawatts of power (enough for 4,000 homes) was signed in 2002. Ledcor Design-Build (Power 1) Inc. developed and provided $15.2 million in construction financing for the Brandywine project, which Krushnisky said became fully operational three months ago. One

of the driving forces behind the Brandywine project has been David Keiss, who managed its development and is a director of the Independent Power Producers of B.C., which represents private energy operators. Krushnisky and Keiss are joined by David's father, Alex Keiss (a former Hydro staffer), Michael Sweatman, the former president of Yukon Energy Corp., and well-known Bay Street deal-maker Scott Paterson, the former CEO of Yorkton Securities. Run of River - formerly Healey Capital Corp. - closed an $8.8 million private placement in June. Its proceeds were used to pay off construction financing, generate working capital and develop a number of other power projects nearby. Shares began trading in Run of River (TSX:V: ROR) last month on the Toronto Venture Exchange. They were valued last week at $1.10. Krushnisky's team recently secured a $13 million debt financing, via Industrial Alliance Insurance and Financial Services Inc., the Canadian life and health insurance company. With long-term financing in the bag, Krushnisky plans this fall to seek a further contract to supply power to Hydro via three additional run-of-river projects he's developing at adjacent watersheds near Brandywine, with their construction - if they were to go ahead - likely staged over three years, he said. pharris@biv.com <mailto:pharris@biv.com>

Bio-diesel: A Fernie family's solution to avoiding pain at the pumps
The Free Press (Fernie) , Wednesday, August 24, 2005
Byline: Naomi Larsen

ELK VALLEY -- With gas in high demand, prices creeping over and above one dollar, car owners are looking for other options when it comes to operating their vehicles and a Fernie family may have found the key. The Tomlinsons have been running their diesel Dodge on recycled vegetable oil for more than a year and they say it could be the way of the future. President of Agri-Green Biodiesel Inc. Gary Tomlinson says biodiesel is an alternative fuel that can be used in diesel engines without modifications, or costly fueling infrastructure upgrades. Raw materials such as canola oil, animal tallow, or used restaurant grease produce an environmentally friendly fuel that will help Canada meet its Kyoto commitments. In fact, Tomlinson says it would take only six fill-ups with his truck to meet the One-Tonne challenge issued by the Canadian Government. In order to make biodiesel, fats and oils are chemically reacted with an alcohol (usually methanol) to produce chemical compounds known as fatty acid methyl esters. Biodiesel is the name given to these esters when they are intended for use as fuel. A co-product of this process is glycerol, which is widely used in pharmaceuticals, cosmetics and other markets. Tomlinson began getting involved in biodiesel after becoming frustrated with paying for high prices of fuel, "and that was a year and half ago," he said. "Now it's gone through the roof." Tomlinson says in the last three years or so, the idea of biodiesel has really started to take off - especially in the U.S. "But in Canada there is really no production," he said. "There's some in Ontario and Quebec, but nothing west of that." Until now. Tomlinson hopes his company, Agri-Green Biodiesel Inc., will be the first company in Western Canada to produce and market biodiesel. The company has purchased a plant that will produce approximately 8.5 million litres of biodiesel a year. The plant will be located in Sparwood and zoning has already been approved. "It should be arriving sometime towards the end of September and we hope to be producing by the end of October," he said, adding there has already been quite a bit of interest from local valley businesses. Other markets would include the Lower Mainland of Vancouver, the interior of British Columbia, and the municipal and governmental agencies in and around the City of Calgary, the City of Lethbridge and Southern Alberta. Tomlinson says although the Elk Valley is a fair distance from Vancouver, he believes it is acceptable to include them in their market due to the 2010 Olympics. "The 2010 Olympics are being billed as a green event with a legacy of green left behind after the event," he said. "It is also being billed as a province wide event that all communities in B.C. have an opportunity to participate and to benefit from." Tomlinson says biodiesel from South Eastern B.C. benefits the rest of the province and has the luxury of being close to the farm and ranchland of Southern Alberta, Saskatchewan and Manitoba. When it comes to using biodiesel in your diesel vehicle, Tomlinson says no modifications need to be done to the vehicle-unless it's older than 1993 where a new synthetic-rubber gas line may need to be installed. He adds many engine and fuel injector manufacturers have issued positive statements regarding the use of biodiesel in their equipment in blends up to B5, or in some cases B20 (20 per cent Biodiesel/ 80 per cent Diesel). "To date there have been no biodiesel-related problems with any engine manufacturer in North America in blends up to B20 meeting the ASTM D6751 standard," he said. Some of the benefits of biodiesel include a 78 per cent reduction in greenhouse gasses, a much higher lubricity and it's better for the environment. "It's the only fuel Transport Canada calls non hazardous," Tomlinson said. "So you don't need hazardous materials training, you don't need double walled tanks to transport or store it, it biodegrades within 28 days and when it's blended, it also speeds up the degradation of the resulting blend. "A 20 per cent blend, which is 20 per cent biodiesel and 80 per cent diesel, will degrade twice as fast as regular diesel." Tomlinson says it also has a much higher