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High-tech hotelier

GLOBE AND MAIL UPDATE

High-tech entrepreneur Tom Rand believes there's money to be made by going green—and he's putting his money where his environmentally conscious heart is. As director of VCI Green Funds, a private equity fund he started in 2005, he's focused on investing in technologies that reduce emissions from energy use.

One of his first projects is Planet Traveler, a 100-bed hostel/hotel for young people. The century-old building in downtown Toronto, close to the Kensington Market, was abandoned 10 years ago. Along with his partner, Anthony Aarts, Mr. Rand is hoping to turn it into a cutting-edge "green" building. He's blogging about his efforts in **The Hotel Diaries** at globeandmail.com/smallbusiness.

An engineer by trade, Mr. Rand has run various tech companies since starting in 1991 with Voice Courier Inc. (VCI), a Toronto-based interactive voice-response software company. The company grew to 100 employees in three countries, with revenue in excess of \$12-million (U.S.) a year. In 2004, he started Voice Courier Mobile Inc. He sold both in May, 2005.

Mr. Rand was online Thursday and answered your questions on the emergence of "green" entrepreneurs and "green" development. On Wednesday, he took in the presentation from former U.S. Vice-President Al Gore.

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Sasha Nagy, Business Features Editor, globeandmail.com: Hi Tom: Thanks so much for taking some time to answer questions on your green approach to business and Planet Traveler, which you are blogging about in **The Hotel Diaries**.

It speaks to the current climate that Al Gore, through his global warming presentation and film *An Inconvenient Truth*, is seen as a more important figure than perhaps he ever was during his tenure as vice-president with the Clinton administration. I understand you went to his presentation Wednesday. No doubt you are a prime example of the course of action that he is advocating for our civilization. What was your impression of Mr. Gore's presentation, and more importantly, the audience's reaction?

Tom Rand: Hi - no problem. As to Al Gore - although he didn't really tell me (or, it seems, most of the people there) any new facts about the situation, he certainly came across as a passionate and charismatic guy who cares deeply about his subject matter, and my reaction to his talk was to feel like kicking up my own efforts a notch. So he was quite effective at galvanizing support, and increasing the intensity level even among those who already know the details of his case. It's clear that there is a psychological element to this debate, at least as far as engaging the public, and he's doing a great job there. I actually got goose bumps at times, because he's not pulling any punches. For all the continuing debate - about how severe the problems will be, and to what degree we should be talking about adaptation vs. taking action - it's a frightening prospect and really is the largest challenge facing our civilization. Gore makes that clear, and reminds you that taking action matters, and matters a lot.

So I think even the believers, like myself, got a shot in the arm. I had a chance to meet him afterwards, and he was a thoughtful and engaging fellow.

Jack Sparrow from Windsor writes: Hi Tom and thanks for taking my question. I've read about synthetic trees, large structures filled with sodium hydroxide, which remove CO2 from the atmosphere. Could a sufficient number of these things remove enough CO2 to significantly lower atmospheric CO2 levels?

Tom Rand: Hi Jack - I've never heard about such things, to be honest. Actually, it would really surprise me if we were capable of artificially engineering a better solution than actual, evolved trees. Have you made this item up??

Sasha Nagy: To answer Tom's question. I found one **news article** on synthetic trees that was published in 2003. I can't speak on the research and wouldn't want to speak like an authority, but it appears to be on at least one researcher's radar.

Tom Rand: So, synthetic trees - turns out they are real, at least as a concept. But, really, sometimes we look too hard for a technical solution, when existing technologies (energy reductions, efficiencies, changes habits, re-forestation, etc.) are already there. We have all the technology we need to solve this problem, and we're burning forests for hamburgers. Burn a real forest for hamburger, then invent a fake tree you have to manufacture to deal with the CO2 gap. What ??? There is, as there so often is with a highly technical solution, no free lunch. Here is a comment about that fake tree:

But not everyone is rooted to the idea. Massachusetts Institute of Technology engineer Howard Herzog thinks Dr Lackner's design will not hold together on the scale he proposes.

He said you would expend more energy in capturing the CO2 - in keeping the slats coated in absorbent and disposing of it - than you would save.

"Once the solvent captures the CO2, it holds it on tight," said Dr Herzog, "and it's going to take a lot of energy to break those bonds."

Sage Walker from Canada writes: I have three questions: The top five changes you would counsel Canadians to make to their home in order to make it green. Some suggested resource persons to help carry these out. Suggest any potential investment resources for Canadians that are green. Thanks for your work.

Tom Rand: Hi Sage - ok, top five changes (and the relative importance of each of these would depend on the type of home, of course, so it's a rough and ready list!): better insulation, better windows, geothermal retrofit, solar thermal on the roof, low-energy appliances run at off-peak hours.

Resource persons - well, for geothermal I would recommend a company I'm involved with (there's a reason I chose them over the competition!) which is Clean Energy Developments (google them). As for the others, there are lots and lots of suppliers - the best thing to do is get a reliable energy consultant to do a survey (there is probably government support for this, different programs, different provinces). As far as investment resources - try invest. There is also a sustainable index on the New York stock exchange. There are lots of mutual funds that promote sustainability, but you need to really look at how they define that word.

Guy Chiasson from Moncton writes: I will soon be graduating with a masters in Environmental Studies. My thesis is on Sustainable Tourism planning. I am now more interested in Environmental Construction, that is making existing homes or businesses more environmental friendly or building new environmental friendly homes and businesses. The problem is that I have

no idea where to start. Is there a course that I can take? What are my options?

Tom Rand: Hi guy. Where to start ... hmmm... does your university not have a set of resources ? There are architects doing interesting work (like www.solares.ca), but as far as courses, your own institution would have a better answer. I like the switch to Construction, though, as Sustainable Tourism is a bit of a red herring ... How sustainable is flying anywhere? Once you're there, you can go for a nice hike and pick up your trash, but really, the flying would far outweigh whatever good you were planning on doing.

Thomas T from Toronto writes: Its great to see people doing things and making money to help the economy instead of just shouting about it.

From what I understand from science the globe has been warming up since the ice ages when no humans lived (or could survive).

This global warming caused naturally increased the temperature dramatically to make it suitable for human beings. Has these natural causes that cause warming stopped doing so now?

Should we put our energy to clean up the pollution instead of trying to stop the warming?

What percentage of global warming is caused by humans and how? Isn't taxing the pollution causing industries and giving tax breaks to the clean air industry a better way?

Thanks for taking my questions.

Tom Rand: Hi Thomas. Well, there are natural cycles due to fluctuations in our planetary orbit, spin, etc. These have been clearly identified - but the current warming cycle has nothing to do with those cycles - this warming cycle is directly coupled with CO2 concentrations. There have been just under a 1000 peer-reviewed papers on climate change published in the last 10 years, and NOT ONE of them disagreed with this basic position. This warming cycle is much greater, and happening much faster than previous cycles.

As far as pollution goes, it just so happens that we WILL address the pollution problem by addressing our energy/climate change concerns. Changing our energy regime and habits has LOTS of ancillary benefits - eliminating waste in the form of inefficient energy use, reduction of all sorts of pollution associated with fossil fuels, economic benefits of a new innovation and knowledge-based economy, less reliance on unstable regimes, etc. etc. Getting smart about energy is just that - smart. The stone age didn't end because they ran out of stones, it's because they found a smarter way to do things!

In terms of percentages - the IPCC has reached consensus of around 90 per cent human contribution, but the point is that the dangers are so great, and the benefits of changing our energy use patterns so numerous, that we should just get on with it regardless!

Thanks for your question - I recommend Gore's movie for a quick summary of solar cycles, CO2 contributions, etc.

James Butler from Stratford writes: Hey Tom Rand, You are to be congratulated for your project. Yet it's 2007 and we still see only green 'demos' where do we find the widespread applications?

Tom Rand: Good question - what we need are the large sources of capital getting behind these kinds of things - and you can bet higher energy prices, and a real price on carbon, would start to attract the big fish.

James Butler: Your investment philosophy at VCI Green Funds is laudable. Though Planet Traveler and Hotel Diaries seem a fashionable project more so than an impact project.

Tom Rand: Well, if you saw my pants, you wouldn't think I was so fashionable .. ha ha. Seriously, we're doing what we can, what else can I say? I'm not Warren Buffet. That said, I'm profiling it as much as I can to demonstrate the feasibility of going green based on economic considerations alone. Every building owner can make these same decisions, so hey - fashion spreads, no?

James Butler: There have been an awful lot of so-called 'green funds' in the last 20 years. Green entrepreneurship is just now getting trendy but has anyone really broken through?

Tom Rand: Well, there are bigger and bigger funds taking this seriously. Jane Ambatchsheer at Mercer has done a lot of work

getting the big pension funds thinking green, and making the case that going green is more profitable than staying dirty. Toby Heaps of Corporate Knights is doing great work at getting the big boys to pay attention, and so on. So, a lot of work is being done behind the scenes to make some change. Once carbon is priced - so you have to pay to emit - then the whole economic energy cycle will change overnight. There is no single more important policy item than to price CO2 emissions.

Record oil profits year-after-year and the establishment of global warming as fact (finally) confirms no great advances.

James Butler: Your slogan at VCI Green Funds is; One Small Fund. A Few Good Ideas. Supporting Massive Change. May I encourage you to introduce Massive Ideas and become The Catalyst for green change.

You have been an impact player in voice-response software. You are in a unique position if you get off the beaten path. Indeed, who better than the small green fund to seed?

For a green entrepreneur with a whole new paradigm, i.e. myself, there is no one to talk to. I thought it may be you but your VCI Green Funds. Good luck in your green ventures.

Tom Rand: Thanks James - I hope your entrepreneurial path is successful. Good luck!

Nick Massey-Garrison from Toronto writes: Let's say I'm thinking for the very first time about 'greening' my company. Where would you advise starting? I assume I'm not going to accomplish cutting my emissions to zero in one fell swoop--could you talk a bit about the process of moving quickly from a standing start towards a sustainable business model?

Tom Rand: That's a great pragmatic question, Nick. The first thing to do is profile your energy use - a kind of detailed audit. Where are you using the most energy- what processes, equipment, time of day, etc ? Once you've done that, you can at least know what pieces of the pie are the biggest, and what targets are easiest. Then simply look at what other options there are to replace that process or equipment, or whether you can move that energy use to off-peak. So how to get going is highly dependent on the type of business - but there is no single, silver bullet. There is, as my boy Al says, "silver buckshot", so you just go through each and every energy cycle, and try to think about ways to change or reduce it. Normally, people shy away from doing this because (aside from the few easy changes like less reliance on air conditioning, etc.) one needs to invest capital. *The point is to view that capital input as an investment.* If you spend \$30,000 on geothermal, for example, the question to ask is: "How much will it save me, and for how long?" If you invested \$30,000 in a GIC what would you get, 4%?? The odds are pretty high the offset in energy costs would FAR outweigh any other investment vehicle you could find. So, don't be offput by capital costs - think like an investor about that decision and it becomes a lot easier - especially if you consider that, presumably, energy costs are going nowhere but up.

Evan Malarky from Calgary writes: Hi, I just want to commend you on your efforts so far and I think your idea of a fund concentrated on green energy companies is fabulous idea. There is no denying the present day energy pollution problems we have and the advantages to those who are early to go green will enjoy in the future. I would much like to be one of those people. I live in Calgary, where talking about emission reducing ideas is almost regarded as sacrilegious with some but I do enjoy the irony. Whether it's an innovation in our oil sands refining techniques or a change in political policy, a change in Alberta is imminent. Do you see any beneficial technology or plan for Albertans like myself in the near future?

Tom Rand: Hi Evan - funnily enough, I had a chat with the very knowledgeable Toby Heaps, of Corporate Knights, about this issue just last night, at the Gore reception. What are you guys in Calgary really, really good at?? Drilling holes in the ground, that's what. So there is apparently an effort to get at the 'hardcore' geothermal energy (the hot stuff a couple of miles down, different energy cycle from home heating) to melt the bitumen. It could be up and running a 3-4 years with some effort. Also, to be fair, Alberta is very receptive to home geothermal, as well as wind. So you guys are doing lots of good things out there. It would be really great to see the 'deep geothermal' project go. Also - all that drilling you guys do out there - you could be a world leader in carbon sequestration, if you really got on with it. So - tax the CO2 emissions and there's the motivation for the big boys to step up to the plate!

Khlaire Parre from Richmond, Va. United States writes: Tom, The Planet Traveler...Exciting project! Are you planning on getting your building LEED Certified if you meet the certification criteria? It will help in advertising your hotel as a 'green building'.

Tom Rand: Hi Khlaire - Yes, LEED is a great thing, and I think it's an important certification process. To be honest, because I want this hotel 'greened' based on simple, monetary decisions alone - so the case can be made to anyone with a spreadsheet - I don't want to have to fit into the LEED profile. If I can get it, I'll take it, but all I want to do is lower my CO2 footprint, that's it. I'm not knocking LEED, but it's not important to me - I'm not selling the building, we're going to run it as our own business for

the foreseeable future.

Evan Malarky from Calgary writes: Somewhat extraordinary innovations have been made in the battery science field. What is your take on present day battery technology and the future it holds. Has VCI funds explored this type of technology to be considered as a applicant for it's private equity fund?

Tom Rand: Hi again, Evan - um ... batteries ... haven't looked to much at it. A fuel cell is really a giant battery, since you can get the necessary hydrogen from water by electrolyzing it. There is apparently a company in California developing some super-capacitor ... but, I don't have any real insights into this area ... batteries, of course, just offload the energy use from the engine to the grid, though, so you've got to do some intelligent grid management to gain any benefit. If you burn coal to make electricity, then use the electricity to charge a battery, you're much better off just burning gas.

On the issue of transport though - Hydrogen Fuel Injection is a very promising technology to make existing internal combustion engines more efficient. At Canadian Hydrogen Energy Company (of which I'm a VP, so clearly I'm convinced!) we produce a device to inject trace amounts of hydrogen into the fuel-air mixture of big diesel engines, and reduce the amount of fuel required by making the combustion of the fossil fuel more efficient, by extracting more useful work. That can be a retrofit - so all the existing transportation stock can be affected, no need to build/dispose of millions of batteries.

John Blair from Toronto writes: Hi Tom, What has been the biggest hurdle for you so far with your Green Hostel project?

Tom Rand: Hi John ... Hmm. There haven't been any conceptual hurdles - that is, I've found that defining what actions we need to take to reduce our footprint are all simple, and involve existing technologies. Geothermal for heating and air conditioning, LED lighting, good insulation, solar thermal on the roof, a powerpipe (heat exchanger - www.renewability.com) on the shower drains, and either offsets (www.zerofootprint.net) or renewable electricity demand (www.bullfrogpower.com) to bring us down to zero. Each of these items has a solid business case - so it seems to me that it's actually quite easy to develop the plan.

We haven't started building yet, though. I expect that the biggest problem will be with getting the 12 300-foot vertical holes dug that we need for geothermal (we have no horizontal space - a house could put them in the yard, so they wouldn't face the same problem). That, plus I imagine that there will be the usual delays and timing issues in getting permits and construction processes all synchronized!! So the real hurdles will be practical ones, which really goes to show me that *we could hit Kyoto in a heartbeat if we just retrofitted our buildings* reducing our footprint is not rocket science, it's just a lot of small, practical steps done on a massive scale.

Jason Kirby from Vancouver writes: Hi Tom: Many 'green' businesses, like those focused on solar, wind, and bio-fuels, rely heavily on government subsidies and contracts to be viable. How sustainable are they then from an economic point of view? And what will it take for environmentally friendly businesses to be able to stand and profit on their own? Good luck with the hostel and your other projects.

Tom Rand: Hi Jason - well, *the single most effective action that needs to be taken is to put a cost on carbon emissions*. Sir Nicholas Stern, the UK's chief economist, has called the lack of cost in emissions of CO2 the single greatest market failure. If coal plants had to pay to emit - and, for pete's sake, they need to, we are getting ourselves in to a horrible, horrible mess! - then wind, solar, etc, would all become competitive overnight. This is an old economic chestnut - polluting the commons costs everyone, and benefits only the economic stakeholders in the polluting company. Sir Stern has pointed out, in some detail, the massive costs of not addressing the climate change issue. Dealing with it, he estimates, will cost around 1% of GDP. Business (or selected businesses) yell about how much that is. Horsepoo - it's only a fraction of our GROWTH. Also, developing the alternative technologies has it's own economic benefit. NOT dealing with it, on the other hand, he estimates will cost somewhere between 5-20% of GDP, on an on-going basis.

So, price carbon, and let the market get to work!

Doug Morrow from Toronto writes: Hi Tom: Thanks for taking questions today. What do you think about the possibility of Canada becoming a world leader in carbon capture and storage technology? As Sir Nicholas Stern pointed out the other during his visit to the Economic Club of Toronto, Canada is not so bad at storage (Weyburn in Saskatchewan) but we really trail other countries in terms of capture. So,

1. how important do you think carbon capture and storage is in terms of Canada's long term transition to a low-carbon economy and;
2. what could the government do to encourage innovatoin in this area?

Tom Rand: Hi Doug. Good question. In terms of carbon capture and storage, I think it's immensely important. Given that we cannot change our energy-production infrastructure overnight, and renewables are not going to ramp up fast enough, we need that piece of 'silver buckshot' ... It's only useful in the big, central production centers that are near a storage site, though, so it's application is somewhat limited ... Capture technology needs to be developed, and I've heard a figure of energy requirements being something like 15% of net - so you use 15% of a barrel of oil to capture the carbon from the whole barrel.

As far as what the government should do - I'll keep ringing the same bell: put a price on emissions. Some argue that the government should directly help, in terms of financial incentives, but I don't see it. The oil companies are awash in cash, and given the economic incentive of having to pay to emit, would be highly motivated to get the job done.

Tony Knight from Toronto writes: Hi Tom I saw a news report yesterday about adding titanium dioxide to concrete in buildings and roadways. This has been shown to eat up oxides (COx NOx SOx) from the atmosphere (Sunlight causes the TiO2 to emit free electrons which. I guess it could probably be applied in some kind of paint too. This seems to be good way to use existing structures to help in the fight against air pollution at or near the point of emission. Have you heard of this - any thoughts?

Tom Rand: Hi Tony - yes, I have - apparently there is a big push in Europe to get that cement, and paint, installed. I think it's a great idea - can you remind me of the company that produces it?

Tony Knight: I also think using ethanol as a fuel additive/replacement may cause as many problems as it replaces - it will likely cause destruction of forest in order to plant more ever more lucrative corn, and the use of petrochemically derived fertilizers. (also price corn a food staple out of the reach of the very poor) Input?

Tom Rand: Yes, biofuels are a difficult issue - right now, they are burning massive amounts of forest in Indonesia to plant Palm trees for their oil to put in to fuel in Europe. The net effect of burning those forests FAR FAR outweighs the benefits of putting the oil in the form of biofuel into European cars. We don't have enough land to produce the fuel we need here, or in Europe, or anywhere for that matter. I think, though, that biofuels can be - to keep this image of multiple, small solutions, alive - one of the pieces of 'silver buckshot'. We can get fuel from lots of low-grade biomass - like corn cobs and other agricultural waste, switchgrass, industrial bio waste and even sewage (see www.dynamotive.com, for example). There are ways in which it can play a role without converting all our farms to fuel pumps. I was told yesterday that the Canadian forestry industry is using massive amounts of bio fuels, from thier own wastes, and have actually reduced their emissions significantly, even though their total economic output has gone way up. So, it's not a full solution, but it has a role to play if we do it right.

Sasha Nagy: Tom: Thanks for your thorough answers. It has been a very popular discussion and unfortunately there were too many questions for the time we had. Even one more about synthetic trees ... but I digress. In closing, can you talk about the political hurdles out there. Do you think the solutions for entrepreneurs like yourself lie at the municipal level or at federal/provincial. Will political parties like the Green Party break through when business owners like yourself, make the leap into politics?

Tom Rand: The solution for me, for large companies, and as a framework for the entire economic cycle is to stop allowing CO2 to be externalized by the emitters: *put a price on carbon emissions*. There is no other single policy mechanism that could be as effective, in my view.

There is certainly a role for municipal governments - establish new building codes. Geothermal should be mandatory on all new buildings, in my view. Same with LED or florescent lighting. Municipalities have their own fleets - green them, put Hydrogen Fuel Injection on all the garbage trucks. All levels of governments have their area of influence and policy - encourage retrofits, for example. Why are we building new power plants, when we could retrofit electrically heated buildings with geothermal?? This is a market failure, because the power companies do not want to reduce the amount of energy they sell, they want to increase it - yet it would be cheaper, and more efficient overall, to do that retrofit. Governments define the context in which business operates, and that context should be geared at energy reduction, simple as that.

Again though, until we put a price on carbon emissions, there is no economic signal being sent to business to change the status quo.

It's been a real pleasure, today. Thanks to everyone for their questions!

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