

streetwise

# The Energy Report<sup>®</sup>

Featuring investment coverage on fossil, renewable and alternative energies

- ▶ [Home](#)
- ▶ [In the News](#)
- ▶ [Analysts](#)
- ▶ [Industry Newsletters](#)
- ▶ [Web Sites](#)
- ▶ [Uranium Directory](#)

Search




> [About The Energy Report/Streetwise](#)

> [Legal](#)

> [Site Index](#)

## Green's Looking Lush to Lawrence Roulston

Source: The Energy Report, interviewed by Karen Roche, Publisher 11/25/2009



*Wherever you look, you can see evidence of growing momentum in the green energy movement. With interest in alternatives to traditional, non-renewable sources of energy picking up steam around the globe, GreenTech Opportunities' editor and publisher Lawrence Roulston says investors in the sector may realize spectacular rewards. As he tells The Energy Report in this exclusive interview, he particularly favors enterprises on the brink of bringing breakthrough technologies to market—technologies that hold the*

*key to making alternative energy production more economical, more efficient and more reliable.*

**The Energy Report:** Green energy is getting considerable attention in the U.S. and Europe. Judging from what you see in your travels, how much emphasis is the rest of the world placing on green energy?

**Lawrence Roulston:** It varies from country to country. Europe is years ahead of the U.S. Germany, for example, has developed a world-leading solar power industry. Many countries have set firm targets for green energy production and are working diligently toward meeting them. The result has been a great deal of new economic activity.

**TER:** What's your perspective on green energy in some of the countries that are expected to grow?

**LR:** That's a very important topic because there are some misperceptions out there. Take China, for example. Anybody looking at China in particular sees it as a country that makes massive amounts of electricity by burning coal. While that is certainly the case, it's an entirely different picture looking forward. China has a target of 15% of its total energy to come from renewable sources by 2020 and there is speculation that they're going to boost that to 20%.

That is actually very significant because they're not saying 15% or 20% of the *current* level of production, but of their *total* energy production as it will be by 2020. China is one of the few places that have set firm targets to actually increase the proportion that's coming from renewable sources. They're really aiming at a moving target, because the country is growing so fast and energy production is growing so fast.

They are well under way with projects that will produce solar, wind and hydro power. Certainly they won't reduce the amount of coal they burn any time soon, but at least a portion of their growth and in fact an increasingly large proportion of their energy will come from renewable sources.

**TER:** What about the other BRIC (Brazil, Russia, India, and China) countries? To what extent will their growth offset green energy advances in North America and Europe?

**LR:** Russia has proposed a target, although it hasn't been formalized yet, of 20% renewable by 2020. A large part of that is going to come from hydroelectric. There's a lot of untapped hydro potential in Russia.

India hasn't set formal percentage targets, but they have a target of generating 25,000 megawatts of power from renewable energy over the next four years, which is a big increase from their current level. That's going to be focused on solar and wind.

Interestingly, Brazil is already the world's largest renewable energy market, with massive hydro projects already in operation and a long-established ethanol sector. In fact, 40% of Brazil's energy now comes from renewable sources and 85% of their electric power production is renewable. So they're really going to continue to focus on that ethanol and hydro sectors in the near term.

So, even the BRIC countries, which are fast growing and have a reputation of being polluters, are well ahead of the United States' plans or at least at the worst case are going to be matching U.S. targets for renewable.

**TER:** Who's going to lead the game in technology advances or adaptation?

**LR:** As I mentioned earlier, Germany has developed a world-leading solar power industry. In fact, Germany has emerged as a leader in photovoltaics, which came about directly as a result of a government policy to increase production of renewables. They developed feed-in tariffs, which gave a preferential rate to renewable energy and spurred development of the photovoltaic industry. It led Germany to become one of the world's leading experts in photovoltaic technology, and some large production and installation companies have sprung from that effort.

China also is a major player in this sector. One of the largest photovoltaic manufacturing companies is a Chinese company. Right now their biggest market is Europe, but with the initiative that's getting under way in China, it will shift more and more to the domestic market. So big initiatives put forward by the governments in some of these countries have had a massive impact on developing the technologies.

**TER:** Your [GreenTech Opportunities](#) newsletter covers the technological advances worldwide that will provide either operating efficiencies or renewable sources?

**LR:** Absolutely. We're looking around the world. A lot of good work is happening out there. When the private sector is turned loose on projects like these, it's so much more effective than governments. Provided the price incentives, industry has risen to the challenge, technology is evolving very quickly and some very exciting enhancements are being commercialized right now in the renewable energy sector.

**TER:** Can you discuss some of those?

**LR:** [Natcore Technology Inc. \(TSX.V:NXT\)](#) is a tremendous example of what's happening. It has a market value of next to nothing, but if its work is successful, Natcore could be responsible for a breakthrough technology that could revolutionize the whole photovoltaic industry. Natcore was founded by two very accomplished scientists with different approaches who realized that there was huge synergy in combining their technologies. They set up Natcore and took it public to finance their development work.

**TER:** Could you tell us a little bit about their technology?

**LR:** A scientist at Rice University, Dr. Andrew Barron, developed a nanotechnology-based method to create thin films of silicon. His approach uses normal temperature and pressure and gets away from the high-temperature methods used now. The advantage is greatly reduced costs of production. In discussion with Dr. Dennis Flood, a world-leading authority in solar cells—who led NASA's programs in advanced photovoltaic systems development—they realized that Dr. Barron's Liquid Phase Deposition process could be used with commercial tandem solar cells as well. Their technology breakthrough has been validated at the laboratory level, and will reduce costs greatly and improve efficiencies if it can be applied commercially. Present technology captures only a limited range of light wavelengths and therefore only about 15% of the light is converted to electricity. The technology being advanced by Natcore could convert more than 30% of the light to electricity. The doubled efficiency would come from a cell that has a lower production cost than at present.

Natcore is working with a potential partner—an established photovoltaic cell producer—to establish an arrangement whereby the Natcore technology would be employed in a full-scale manufacturing facility within months. The initial application would be for one component of a conventional photo-cell. Research is continuing toward commercialization of the tandem cell application, with a timeframe of a couple of years.

When we first presented this company in *GreenTech Opportunities*, it almost seemed too good to be true. Over recent weeks, more investors have recognized the credibility of the technology and the people, resulting in a doubling of the share price. The company is still cheap in relation to the potential value if its technology can indeed be applied commercially.

**TER:** Solar and wind energy options often get dismissed as alternatives because the energy source (sun or wind) is unpredictable. What do you have to say about this?

**LR:** A grid needs a balance of such intermittent producers of energy with base load and peaking sources. The real problem with wind and solar is that they cost more than gas or coal. As I've indicated, technologies are evolving so that the alternative energy costs will come down over time. The intermittent nature of the energy production factors into the cost of these alternatives, but once wind or solar energy sources are in production, they are effectively free.

*GreenTech Opportunities* is looking at companies—such as Natcore—that are contributing to reduced capital costs and to higher efficiencies. Solar technologies in particular have enormous scope for improvements.

**TER:** What role do you envision nuclear power playing in the green energy picture?

**LR:** If all the new reactors that under construction, planned or proposed are built, we would see about 900 reactors in production over the next couple of decades. Of course, some of the 400 currently in operation will go off-stream. The net result will be an approximate doubling of the nuclear sector by 2030.

**TER:** Sounds pretty considerable.

**LR:** Yes, but it will just about keep pace with the projected growth in total energy production. At present nuclear represents a couple of percent of the total energy production, and it will not be much more over the next couple of decades.

**TER:** You have followed uranium in the past. If we're looking at doubling the reactors but net just keeping pace as a percentage of overall energy production, is there an investment play there?

**LR:** There isn't much of a play in terms of nuclear producers, because almost all of the production comes from either government-owned entities or small parts of very large companies. On the uranium side, though, there's definitely a play. Doubling the amount of uranium required over a couple of decades—finding and developing that much new production capacity—will be a challenge for the mining industry. Our [Resource Opportunities](#) newsletter definitely follows the uranium sector for that reason.

**TER:** Will uranium return to 2007 levels?

**LR:** Probably briefly, but I wouldn't count on that as a long-term price point. Even at the current level, though, there's tremendous potential for big profits for companies in the uranium sector that find and develop new production. I think we're going to see a long-term gain from where we are now.

**TER:** Can you speak to some of the uranium explorers or near-term producers that you're following?

**LR:** One that's been in the news is [Hathor Exploration Limited \(TSX-V:HAT\)](#), which has made an important discovery in the Athabasca Basin of Northern Saskatchewan, where about 30% of the world's uranium is produced. That's an example of a company that's seen a big increase in its share price over the last year or so, as it's evolved through discovery to outlining a deposit. And there's still a lot of growth in the size of that deposit. The market has yet to price in the full potential of the discovery that was made.

**TER:** Do you consider the trend toward consolidation of smaller geothermal producers into new entities—such as [Magma Energy Corp. \(TSX:MXV\)](#) and [Ram Power Corp. \(TSX:RPG\)](#) and to some extent [Ormat Technologies Inc. \(NYSE:ORA\)](#)—a positive one? And do you expect more consolidators to emerge?

**LR:** It is absolutely a positive trend. The larger entities will have far better access to capital than would any of the small players on their own. That will enable them to take on bigger projects and in general reduce total production costs. Furthermore, larger entities will have better access to talent and be better-positioned to develop new technologies. There will be more consolidation. Magma's investment in Iceland is one example.

There is a sweet spot in any industry, when an emerging company reaches a critical size enabling it to compete with major players yet still retain an entrepreneurial culture. Magma is certainly in that space. We introduced Magma just as it went public, and it has generated good returns.

**TER:** So if we're looking for additional consolidation in geothermal, does the opportunity lie in investing in the juniors with an eye toward acquisition? Or is it a better bet to go with the consolidators who are bringing technology and talent to the table?

**LR:** The smaller players that will eventually get rolled into the bigger players will provide a good return for the shareholders of those companies, but it's a matter of picking the companies that have viable projects that will actually get rolled into the larger players.

I think you have a good balance between the speculative exploration companies on the one end of the spectrum and the major producers the other end—in companies like Magma that

are already evolving as consolidators and they're going to realize increases in value as they bring in smaller players and increase their own production levels.

As I alluded to a moment ago, Magma has made a very, very big play in taking a significant position in a major geothermal producing company in Iceland. Magma's going to become one of the larger shareholders in that company, which will provide not only a lot more opportunities in Iceland but also give Magma the critical mass to move into similar situations.

**TER:** Should green technologies be viewed as part of an investor's speculative portfolio and, if so, what can be done to mitigate the risk inherent in speculative investments?

**LR:** Any company in the research and development stage is highly speculative and one of the best ways to deal with a risk in a particular company is to hold a portfolio of companies so you get some diversification.

Even in the depths of a worldwide recession, the sector is still getting a lot of attention. Government policy and public opinion are still mounting in favor of these technologies. The momentum favoring renewable energy around the world is so strong right now that it's almost impossible to imagine that momentum being reversed, but there is an important caveat.

There's no assurance that renewable energy is going to emerge as it looks like it will at this moment. There's a systemic risk that people have to be prepared to live with. While diversification reduces systemic risk, investors still have to recognize that these are definitely speculative investments.

Investors also could participate in this sector by going into the producers. For instance, companies that are developing wind farms and solar power generating facilities are less risky. The trade-off is that you won't get the big upside potential, because you're looking at more of a utility type of reward potential from the sector's producing companies.

**TER:** But probably more upside potential with a wind farm and solar than a traditional utility?

**LR:** An investor has to look very carefully at the revenue potential. A company that builds a wind farm or a big solar facility right now is counting on subsidies or feed-in tariffs or some other form of incentive to make the whole thing commercially viable. An investor has to understand how long-lasting those incentives are.

The ideal situation would be where the developer gets an incentive based on a rebate of part of their capital cost—in effect, an up-front subsidy. And then if they can bring their cost of production down, they can increase the margin over time. So just a caution that investors have to look carefully at the structure of the subsidies or whatever other incentive makes it commercially viable.

**TER:** What green technologies will emerge in the short-term that represent good investment opportunities?

**LR:** The real excitement for us is in the little companies that are developing technology enhancements. We've talked about Natcore. We also are looking a little company that has a device that can improve wind turbine efficiency by 5% to 10%.

Green energy production companies have potential for good returns, too, but as I say, bear

in mind that the larger producers are effectively like utilities in that they will generate a decent—but not spectacular—return on capital.

**TER:** Should investors also look at technologies that reduce current consumption such as lights, refrigeration and smarter appliances versus those that provide a source of energy such as solar, wind, hydro or geothermal?

**LR:** Absolutely, investors should look at conservation technologies as well as resource technologies. Conservation is far more important than most people realize. The savings are immediate. Further, there is a huge shift toward popular opinion that favors companies taking positive action to reduce energy usage. Consumers want to see more social responsibility. Shareholders like the impact on profits by cutting energy bills. Government policy hasn't come anywhere near reflecting the full benefit of conservation. When you save one unit of energy, you avoid burning coal with more than three units of energy. The difference is the inefficiencies all the way through the electrical system.

**TER:** Can you give us any examples of companies with the emphasis on reduced usage or other means of conservation?

**LR:** *GreenTech Opportunities* introduced a little company, [SmartCool Systems Inc. \(TSX-V:SSC\)](#), which has come up with a way to improve the efficiency of refrigeration and air conditioning systems by up to 15%. A little add-on device that costs a couple of hundred dollars can save thousands of dollars in electricity charges.

**TER:** Any other examples?

**LR:** [Carmanah Technologies Corporation \(TSX:CMH\)](#) is another one. It's marketing stand-alone lighting systems that incorporate leading-edge photovoltaics with LED lighting systems. We just talked about Natcore. We are about to put out the next issue of the newsletter that introduces more companies like these.

**TER:** So there's clearly a lot of opportunity in the conservation, but not a lot of general marketplace discussion compared to wind, solar, etc. How does an investor begin to learn about these conservation opportunities?

**LR:** That's a very good question. In fact, before we started *GreenTech Opportunities*, we didn't really have a clear understanding of how many companies were out there. But once we got in the middle of it, we're finding a very large number of companies doing really, really good work and developing some very interesting projects. A few of them trade publicly, but a great many more are still in the private company stage. Over time, some of those private companies will become publicly traded.

**TER:** What do you mean by a few?

**LR:** Relatively few. Worldwide, we're talking perhaps tens or low hundreds, in contrast to 2,000 publicly traded companies involved in mineral exploration. But you can go to [stockwatch.com](#), for example, and search for mineral resource companies with market value in a particular range. We haven't found anything like that in the green tech sector yet. I'm sure it will evolve. In the meantime, part of the rationale for *GTO* was to provide a vehicle to offer that information to investors who are interested.

I don't have a good answer as to how a typical investor finds out about these initiatives. There's no directory. There's no database or website to give you a list of all the companies in the space, so we weed through hundreds and hundreds of companies, pulling out those that

are actually doing worthwhile work. I have a staff of people now working full-time rooting out these little companies and they're coming up with some great, great ones.

**TER:** It seems that it's a wide-open area that's going to expand and there aren't a lot of places to get information on some of these plays.

**LR:** I don't want to sound like I'm pumping the newsletter here, but that's exactly the reason we got into the space. We saw a very important emerging market that had no real service. There are some very good sources of information in a general way about renewable energy and certainly the major companies in the sector are well-served by a number of sources of research. But the small companies, these evolving technology companies, really, there's no good source of information on those that we've been able to identify so far, so we think we're filling an important need there.

**TER:** Any additional comments on energy?

**LR:** Just a bit of a recap. Whether it's driven by concerns over greenhouse gas emissions or by concerns about ultimately running out of oil, a huge shift is underway that will accelerate the move away from carbon-based fuels to other sources of energy and enormous profit potential for investors looking out a year or two in that sector.

*A passion for the environment, a strong affinity for emerging companies and a knack for picking winners led Lawrence Roulston to assemble a team of green technology experts and launch [GreenTech Opportunities](#) publishing the premier edition in February 2009. A geologist with engineering and business training and more than 20 years of hands-on experience as an analyst and manager in the resource industry, Lawrence previously founded [Resource Opportunities](#), a newsletter that has been providing objective commentary on the resource industry and emerging resource companies since 1998.*

**DISCLOSURE:**

- 1) Karen Roche, Publisher of The Energy Report, conducted this interview. She personally and/or her family own none of the companies mentioned in this interview.
- 2) The following companies mentioned in the interview are sponsors of The Energy Report: None.
- 3) Lawrence Roulston - I personally and/or my family own shares in the following companies mentioned in this interview: Natcore, Magma, SmartCool, Carmanah, Hathor. Neither myself, nor my family receive any payments from any companies in this interview or in GreenTech Opportunities.

Want to read more exclusive Energy Report interviews like this? [Sign up](#) for our free e-newsletter, and you'll learn when new articles have been published. To see a list of recent interviews with industry analysts and commentators, visit our [Expert Insights](#) page.



[PRINT THIS PAGE](#)

**Related Articles:**

[The IEA and the Role of Crude Oil Forecasts](#)

[China Faces Nat. Gas Shortages, Price Hikes](#)

[Uranium Directory](#)

[Site Index](#) [Usage Agreement](#)

© 2009 Streetwise Inc.