

PART•ONE



Wake-up Time

When they hear about the international citizens' network called the New Energy Movement, our acquaintances often respond as if there is no urgency:

Ah yes, new energy technologies. Green is in! Thanks to Al Gore, everyone is talking about climate change and clean energy. Investors are lining up to fund renewables. The time has come.

The era of renewable energy has *not* arrived. The energy sector growth statistics show that the Green Era won't really be here until the use of nuclear power and fossil fuels shrinks relative to the use of clean energy systems. And the vested interests in unclean energy won't back away from trillion dollar profiteering until the people insist.

Longtime researcher of energy issues Andrew Mount cites statistics showing "we absolutely need an energy revolution to avoid eroding the

environment to the point of a scenario like we saw in the film *The Day After Tomorrow* . . . Even if we were to make incremental gains in the renewable-energy sector—of 300 per cent increase in renewable and clean energy technologies between now and 2020—we’d only reduce oil dependence by two per cent.”

Part One outlines the urgency of the need for clean energy-abundance breakthroughs, and helps you picture in what ways they would transform your world.

1

Jeane's Journey

We are on the rim of a new era of energy conversion. The opposition is big money and decision makers in industrial conglomerates who stick to everything which today guarantees profits and power. Only big groups of people with awareness will be able to overcome this gigantic fortress.

—*GOTTFRIED HILSCHER, ²German technical editor*

It just might be that the discovery of the vacuum energy as a limitless energy source is to be synchronized with a spiritual renaissance for all of humanity.

—*MORAY KING, Industrial engineer and New Energy researcher*

Breakthrough Power is written by a woman trained to be a people-watcher and a man schooled in what are called the hard sciences; we are a sociologist and a chemist—appropriate for a topic that affects everyone’s future.

Joel Garbon and I met in 2003 while helping establish the New Energy Movement, a grassroots effort promoting clean low-cost local systems for tapping into nature’s abundant energy. Although close colleagues in the movement, we are a generation apart in age. While Joel was studying chemistry and engineering and earning his university degree in applied science, I had my degree in sociology and years as a journalist.

This book begins in the first person because the few glances back at my earliest experiences in the “energy underground” are intended to encourage others to make the easy journey from technological indifference to a reasonable level of energy-literacy. However we believe it is even more important to see the big picture—the high stakes for humankind that are involved in its *choice* of technologies. And the high-stakes importance of a widespread change of attitudes.

You don’t have to go as far as to attend dozens of science conferences, travel around the world to interview scientists, dedicate hundreds of hours to transcribing audiotapes, or empty your wallet for energy-related books, tapes and DVDs. You don’t need an academic degree in hard science nor a career in a technical industry as Joel has. All you need is a passion for cleaning up Earth and creating a better civilization—a sharing, just and peaceful society.

New-Energy journey begins

I first heard about non-conventional energy inventions in 1981 while with friends in a restaurant in the interior of British Columbia, Canada. One of them was a musician who had just returned from the nearby city of Penticton where he had been introduced to an electrician named Bill Muller. His impression of the electrician’s work was stunning:

They call him the ‘Magnet Man’. He sold everything he owns to work on his fuel-less electricity-generating invention . . . You’ve got to hear what you can do with these new magnets . . . very strong permanent magnets. You can use them for fifty years and they don’t lose strength . . .

My first reaction was to tune out. Techie talk.

The musician was sketching on a napkin as he enthused. “He found a way to spin magnets past wire coils on a wheel without electrical drag. He invented a configuration which allows easy movement of the wheel without getting a magnet stuck opposite a coil and its core . . .”

Blank faces across the table momentarily silenced the musician.

“Look,” he said patiently, “you all dream about living out in the mountains, in pristine meadows way beyond the power lines. But you still want electricity to run your stereos. How will you get reliable power? Solar won’t do it; the sun doesn’t shine there half the winter. Wind power isn’t reliable in Bear Valley. And you don’t want a noisy fuming diesel generator.

“What if there’s an invention any mechanic could build? It sits there and makes enough electricity to run itself and have plenty left over for appliances, even electric heaters for a greenhouse. You wouldn’t have to chop wood . . .”

One of the men at the table smiled smugly. “An impossible perpetual motion invention . . .”

“No! This guy knows that perpetual motion is impossible in any closed system—you can’t get more out than goes in. But he says his machine is an open system. Open to the cosmos. The magnets constantly replenish their strength by tapping into some primordial background field of energy . . .”

Unimpressed, the skeptic stroked his beard. “Go see for yourself,” the musician challenged.

A petite woman at the table reported that when she had lived in his town, the inventor had shown up once at her metaphysical study group. She remembered his questions about “prana”, a word coined in ancient India meaning an all-pervasive subtle form of energy—the invisible background that permeates every cell of our bodies. Bill Muller had wondered if the prana concept might solve his puzzle: how do permanent magnets perform work –exert pushing and pulling forces indefinitely—without being depleted? Do magnets tap into some source of energy unknown to today’s science?

A massage therapist in the group had also met Muller. The therapist’s own career convinced him that a beneficial life-force “subtle energy” is real, even though scientists didn’t have instruments that could detect it. Alternative medicine views our bodies and cells as an expression of energy which comes from an underlying universal substance or super-fine level

of vibration, he mused. Could magnets also interact with a different form of energy than standard electricity?

I started to wonder. *What if this unusual motor thing is real, and could in fact halt destructive megaprojects? The damming of wild rivers for instance. Could there really be an alternative clean power source that's way more effective than solar or wind? If so, then no more oil wars!*

Maybe it's time to learn a bit about electricity.

Magnet man

In the next month several of my male friends and I arranged to meet the Magnet Man at his home. It turned out he was far from having a market-ready power generator, but it was a meeting that changed my life journey.



Bill Muller and 1980s magnetic experiment.

Bill Muller was a tall grey-haired man with an apparently high level of vitality despite incessant cigarette smoking. He moved around the room lightly, with nervous energy.

Holding everyone's attention by his forceful personality, he described his invention as a way to make a heavy wheel carry strong magnets past electricity-inducing copper coils without needing to fight the electrical drag force which usually opposes rotation and limits how efficient a generator can be. His wheel didn't have any "stuck" position; it moved freely.

"We have a magnetically balanced flywheel."

In his basement workshop, Bill showed us the beginnings of a permanent-magnet generator.

"Don't call it 'perpetual motion!' The 'fuel' to power the generator is the strong magnetism of rare-earth magnets," he said, while weaving his way through a clutter of machinery with the ease of an athlete. He quoted nineteenth century science pioneer Michael Faraday, "Any change in the magnetic field around a wire tends to set up an electric current in the wire."

I couldn't follow his rapid-fire discussions of motors and generators, so he turned his back and addressed the male visitors. They later admitted to having just as much difficulty following his explanations.

I mentally reviewed the little I had learned: *electric current begins running in a wire when the wire is near a changing magnetic field*. In my life so far, electricity had seemed a topic only meant for the pylons-and-hardhats crowd.

Benefits for the people

Parts of the inventor's message were easy to grasp, however.

Can you imagine what this will bring to mankind? Think what you could do with something that's just powered by magnets! You don't need the power company. You could live anywhere! Grow food all winter . . . When we get the machine self-running you can unplug from the electrical grid. Unplug from the utility bill!

He said mainstream science can't explain what force continually replenishes the field of powerful permanent magnets. Such magnets can lift many times their own weight and they only lose strength if struck forcefully as with a hammer, or if subjected to extreme heat. What gives

magnets the strength to do work? The answer is at the atomic level. Then what gives atoms their perpetual spin?

One of my friends interrupted Muller's line of questioning by asking if the motor/generator would be able to run a car.

"Sure, we can make one that'll run a car. We just need some money to develop all this stuff."

We were disappointed that Muller's company Pran Technology was still in the research phase. Afterward one skeptical friend warned me against investing in a venture that could be a bottomless pit sucking up my time and money.

Food and air at risk

Nevertheless, I felt a sense of urgency. Our provincial government was making noises about building another huge hydro dam in the Peace River valley—flooding fertile bottomlands to make electricity. I had spent my early school years on my family's farm, and learned to value loamy alluvial soil that can grow mineral-rich food. *Don't drown farmland under tons of water behind a dam! Living soil is disappearing fast enough*, I thought. And in cities, fresh clean air had faded into a memory, due to the burning of carbon fuels.

"If Bill is right, we don't need oil or megaproject dams or nuke power plants at all," I realized.

My impression that the impatient inventor had been pat-on-the-head patronizing toward a woman's intelligence only increased my resolve to find the truth. I knew that society's choice of its power source affects everyone—men, women and children.

Back home, I headed to the public library. How does a non-technical person learn about a technical topic? I started in the children's and junior high school sections on electricity and magnetism, and worked up from there to weightier books.

Look at me, a social worker people-person do-gooder. What's with this new-found technophilia? Despite enjoying a laugh at myself, I felt a shift inside me, as if a doorway had opened to a mysterious and inviting new view.

When my youngest son and I moved to Penticton two years later, my education escalated. I volunteered to type letters for the busy Muller household in return for the opportunity to read their books and meet the visitors who came to Penticton from around the world. *I'm not a scientist*

and can't judge whether 'free energy' is possible, but as a writer I can tell the world about this fascinating scene, I thought.

Archetypal inventor's story

Bill Muller's life story has many elements in common with those of other inventors I would later meet. Born Wilhelm Johann Friedrich Muller in 1931 in Bremen, Germany, from early on he felt a strong connection to the natural world and an interest in science, and had dreams of becoming a forester. But with the harsh realities of living in a devastated Germany in the aftermath of World War II, it was wiser to learn a trade. Eventually employment as an electrician at Siemens Corporation took him to South America and eventually to Canada.

His fascination with magnets—as possible channels for diverting an unseen energy source—began in 1968 when he and his wife Ilona lived in Barrie, Ontario. He had salvaged two 30-pound bullhorn magnets from a radar installation and set them on his workbench. Idly dropping marble-sized steel ball bearings into an empty sheath made for holding golf clubs, he then held the transparent tube between the large magnets. Inserting another bearing, he was fascinated to see the steel ball pause in the plastic tunnel and vibrate. Apparently the “steelie” was in the middle of a strong magnetic field or fields. Suddenly the steel ball was launched out of the tube at such velocity that it blasted through a concrete wall and disappeared.

Muller intuited that the ball's acceleration had something to do with the frequencies at which it had vibrated, and he believed he could somehow harness the mysterious power of magnets into a revolutionary and highly useful invention.

A turning point in his research came in 1981, the year Manning met him, when he bought some powerful samarium/cobalt magnets the size of ice cubes. They were a revolutionary advance in the strength of magnets; their holding force would have overwhelmed and stopped the spinning of a rotor wheel if he had not been inspired to rearrange parts of the machine:

If he had followed the usual pattern and placed the super-strong magnets in his wheel across from an equal number of copper coils, immense force would have been required to wrench the wheel forward. He solved the problem of the stuck position by simply eliminating one of the pieces and distributing the rest of them evenly, so that 16 magnets rotated past only

15 coils/cores. This odd-and-even configuration of coil cores and magnets offset the holding force. Now the wheel spun easily in either direction.

Had he eliminated work previously required in a motor/generator? Muller thought about the implications of doing so; it meant that society could tap into the power of magnetism instead of burning polluting fuels to turn a generator. Increasingly he felt he was on the trail toward new clean energy technology that could help rejuvenate the Earth.

What's the point of zero point?

During their years in Penticton, the guest book and correspondence at Mullers' home was an education in itself. Bill Muller showed me a letter from engineer Rudolf G. Zinsser of West Germany³ who agreed with a Canadian engineering report that said Muller's invention was ideal for getting more electrical power out of windmills.

"By the way," Zinsser's letter advised, "the notion 'efficiency' applies for a closed physical system and cannot by definition exceed 100%. (Instead of saying efficiency) you want to state 'yield', which applies to open physical systems such as a windmill whose energy yield exceeds by far the mechanical work put into turning the windmill's blades into the wind."

"Closed . . . open." The arguments are all about the law of conservation of energy, I realized. Does the no-free-lunch law of physics cover every situation?

Zinsser's letter went further: "As for the alleged source of energy, I am convinced that the so-called zero point energy does exist. There is plenty of scientific literature on the subject by recognized physicists."

'Zero point energy'? What's that? The letter answered my question in part: "Quantum gravity, as it is also named, is 'alive' within spaces as small as 10^{-23} centimetre."⁴ Zinsser said such as space is far smaller than the diameter of a nucleus of an atom. The German scientist had worked through the mathematical calculations in his own invention an attempt to explain its surprisingly high yield of mechanical energy.

I was puzzled about zero point energy, but more information would soon come to me when I met a former consultant for the National Aeronautics and Space Administration (NASA).

Rocket scientist

One day the Muller household buzzed with news. "Dr. Schaffranke's coming for a visit!"

Rolf Schaffranke Ph.D. was a distinguished scientist who had retired to the American state of Georgia. Bill Muller was impressed because Dr. Schaffranke had been in Peenemunde, Germany, where he worked alongside the legendary rocket scientist Wernher von Braun. Schaffranke was the youngest of the group of German scientists including von Braun who were spirited out of Germany by American intelligence agents at the close of World War II and brought to the United States in order to advance the fledgling U.S. rocket program. Schaffranke worked for the aerospace industry, and before retirement was on a NASA contract as a consultant to the propulsion laboratories in Huntsville, Alabama.

Before the visitor arrived, Bill pointed to the bookshelf and told me that *Ether Technology* was written by Schaffranke.

“It says the author is ‘Rho Sigma,’” I noted.

That was a pseudonym, Ilona Muller replied. When Schaffranke wrote the book, he was still working for NASA. Previously his NASA boss had reprimanded him for publishing a historical review of inventions. The boss had written in Schaffranke’s personnel file, “It is restated that any journalistic activity along this line should be submitted for approval through company management”.

‘Expert’ predictions

What had been so objectionable about Schaffranke’s article in the engineering journal? He had merely pointed out the numerous instances in which science experts have held onto an incorrect out-dated worldview and thereby stifled scientific advancement and breakthroughs. He had looked into history as far back as 16th century physicist Sir William Gilbert, who said “Science has done its utmost to prevent whatever science has done.”

The book *Ether Technology* gave many examples of experts rejecting what they didn’t yet know, including:

- Von Braun’s teacher had written a book about space rockets and sent it to ten publishers, who each sent it back. Schaffranke doubted that they read more than the title before deciding the book didn’t fit the accepted worldview. An expert reviewed the book and arrogantly said the time had not yet come for space rockets “and indeed probably never will come”.

- American physicist R.H. Goddard was ridiculed and called “Moon-mad Goddard” until he launched the first successful liquid-fueled rocket.

“This history is eye-opening,” I said, “but I don’t view rocket scientists as the apex of intelligence!”

“You mean you boycott the venerable expression ‘It doesn’t take a rocket scientist . . . ’?”

“It doesn’t take a biologist to figure out that launching an oversize burning firecracker isn’t the best way to get to the stars.”

Laughing, Ilona responded, “Burning fuel? There *is* something better.”

Schaffranke’s book shattered my illusions about scientists’ objectivity. The former NASA consultant quoted a colleague about how uncomfortable it is for “scientists with a hard academic glaze” to meet up with any discovery that disrupts long-established dogma. He said these experts become like the ancient map-makers who wrote on their maps, near the Pillars of Hercules (Gibraltar), “hic deficit orbis”. Here the world ends.

The physicist gave another instance. Respected scientists of the early 1930s insisted that any attempt to use the energy contained in an atom’s nucleus would be doomed. These authorities proclaimed that the energy released would be less than the energy required to smash the atom.

Schaffranke had looked to *The Truman Memoirs* for another example. Admiral William D. Leahy was Chief of Staff when he told the president of the United States that an atom bomb project was impossible. “The bomb will never go off, and I speak as an expert in explosives.” A short time later, Hiroshima and Nagasaki tragically showed how wrong that expert was.

These history lessons made me question further. *Could today’s ‘experts’ be blind to a new clean-energy science? Could academics overlook a beneficial paradigm just because it’s so very different from what they’ve been taught?*

Gentleman physicist

When I met Rolf Schaffranke, he turned out to be a cultured, gracious gentleman and curious about my keen interest in energy.

I told him about a small but eye-opening meeting of the Canadian solar industry I had recently attended as a newspaper reporter. There I saw a blatant contrast. On one hand I knew the public had been led, by outside “experts”—to believe that solar technologies will never be efficient enough

to provide cost-effective electricity. On the other hand I heard frustrated workers in the solar industry present a very different story.

Even in the 1980s researchers had advanced the efficiency of solar photovoltaics—electricity from sunlight—far beyond what the public heard about, but solar didn't get enough government support to build solar panel factories that could bring down their prices. Meanwhile their government gave the oil and nuclear power industries the bulk of the energy sector's taxpayer-derived financial support and subsidies.

Schaffranke nodded in apparent sympathy when I summed up my motivation. "I don't want my grandchildren to suffocate in an oxygen-deprived world as a result of fuel-burning, or be sickened by radioactive garbage in the air or in the waters."

The physicist said he believed Bill Muller's invention could be developed into a high efficiency nonpolluting generator of electricity. Its simplicity meant it would be fairly easy for other skilled people to build.

I remarked that an engineering consultant from Alberta said the Muller generator should be put in windmills to make more electricity per gust of wind. Schaffranke agreed. If developed, Bill's invention could dramatically improve the electrical output from windmills.

I asked the distinguished guest what motivated him to venture outside the accepted mindset. "What caused a rocket scientist to point out flaws in established theories about how the universe works?"

He replied that he cared about the fact that important new science is being ignored—new science pointing toward fuel-less generators and vehicles.

Hitting the road

Rolf Schaffranke was the first of dozens of credentialed scientists I've met on the new-energy trail. In 1986 the Muller family invited me to join them on a road trip in a borrowed motorhome—to southern California for a new-energy conference sponsored by a magazine titled "Magnets In Your Future".

Since that first conference I've attended more than two dozen such meetings in a half-dozen countries. I'm grateful to have met so many brilliant inventors and researchers and remarkable visionaries, and encouraged to see younger-generation colleagues such as co-author Joel Garbon—a warm and natural speaker as well as a knowledgeable scientist—providing an increasing presence on the new-energy conference circuit.

The benefit of our travels, to readers of this book, is that we can share what we have learned from inventors, researchers, and engaged citizens from various countries—people who are actively involved in game-changing scientific research. Those people share insiders’ insights on the issues everyone needs to know about, such as strategies for replacing King Oil’s multi-trillion-dollar monopoly. They intend to see carbon fuels and nuclear fission replaced with clean decentralized alternatives that benefit all of Earth’s citizens. The stakes are incredibly high.

Biggest challenge

We have also learned that neither inventors nor investors realize how long it takes to go from proof-of-concept to commercial product. The timeline is especially lengthy for truly breakthrough energy inventions because they lack academic and bureaucratic support. Revolutionary inventions are not born into a simple invent-and-reap-rewards world.



Carmen Muller and her father’s magnet motor/generator.

Confronting geopolitics, inertia, fear and greed in order to birth a New Energy Era is the biggest worldly task humans have faced. Lone inventors have believed they personally had to take on the weight of that task and some felt crushed by it. Bill Muller tripped over the need to raise funds for his research. However, after his death in 2004 the next generation carried on the work.

Bill and Ilona Muller’s daughter Carmen is determined to see her father’s invention being used to help provide abundant clean power for the people. To carry on the task, she teamed with a philanthropic business person to fund the engineering development of her father’s technology as well as some other inventions.⁵

Inspired inventors

Bill Muller was one of many inventors we've met worldwide who were nudged by dreams, accidental discoveries or intuition to make breakthroughs in the power-conversion field. One well-informed aerospace journalist has noticed the remarkable proliferation of such inspiration. British author and aerospace insider Nick Cook writes for *Financial Times*, *The Wall Street Journal* and other major media and is routinely invited to speak to major aerospace corporations, government think-tanks and universities. Years ago he joined the staff of the world's leading military affairs journal, *Jane's Defense Weekly* and is the magazine's aerospace consultant. While researching a forthcoming book he traveled to Vancouver, Canada to meet with Carmen Miller⁶ and learn about her father Bill Muller's inventions.

I interviewed Cook at that time [in September of 2007] and at one point steered toward the question I first encountered in the Muller home: "What sustains the strength of powerful permanent magnets?" These magnets perform work indefinitely—lifting, attracting or repelling other objects, while textbooks say they cannot do work.

Cook agreed that the way magnetism interacts with the background nonmaterial field—zero point energy, vacuum energy or whatever the field is—does seem mysterious. If magnetism triggers a weird or seemingly magical portal for accessing energy from this field, scientists do not yet understand the process. In places ranging from garage workshops to more sophisticated laboratories, people do appear to be accessing the field, but *how* is not completely understood.

Many inventors seem to be building devices intuitively and experimentally but not by following any particular theory, he noticed. From where are these people—in different parts of the world at or about the same time—getting the inspiration and information on how to build the devices?

He speculates that the knowledge is bubbling up into the collective consciousness. The existence of a global-brain Internet and sharing of knowledge is only a partial explanation for the simultaneous inspirations. Something additional may be happening.

"It's a bit like that moment in *Close Encounters* (the 1977 film *Close Encounters of the Third Kind*) where Richard Dreyfuss starts sculpting the Devil's Tower out of mashed potatoes."

Cook's analogy is apt. In that film, the actor Dreyfuss plays an Everyman role. Other characters in the film who are driven by an implanted suggestion or vision of the same mountain also come from ordinary or humble life circumstances. Similarly, the inspired, and even obsessed, inventors that the authors of this book have met come from diverse backgrounds. Many had happily led simple lives until the "free energy spirit" whispered its secrets to them.

On the other hand, although relatively few garage inventors have advanced academic degrees, the stereotype of an eccentric who is out of touch with reality doesn't fit the majority of researchers we meet at international conferences. Our friend the astrophysicist Brian O'Leary once commented on the difference between the stereotype and the real people. "I have been surprised to see a breadth and depth of knowledge, dedication and professionalism, and substantial achievements among leading theoreticians, experimenters and inventors in the 'free energy' field. These are the explorers of a new reality. They are cut off from the mainstream because the mainstream debunks this reality—with a denial based on the most superficial reasoning."⁷

The preceding introductory vignettes had to be told in the first person voice because they are solely my experiences, but the remainder of the book is in our combined voice as co-authors.

Our goal

Breakthrough Power presents a sampling of the variety of energy-source choices—for powering our homes, industries and vehicles—available to humankind. The implications of staying on our present disastrous course are presented, as are the boundless opportunities contained in the choice for a bold new direction.

Our conclusion is that it's up to all of us—the citizens of Earth—to make the clean energy abundance revolution happen. Our goal is to help generate the critical mass of human caring and collective will power necessary for creating a wondrous new era for our civilization and our precious Earth.