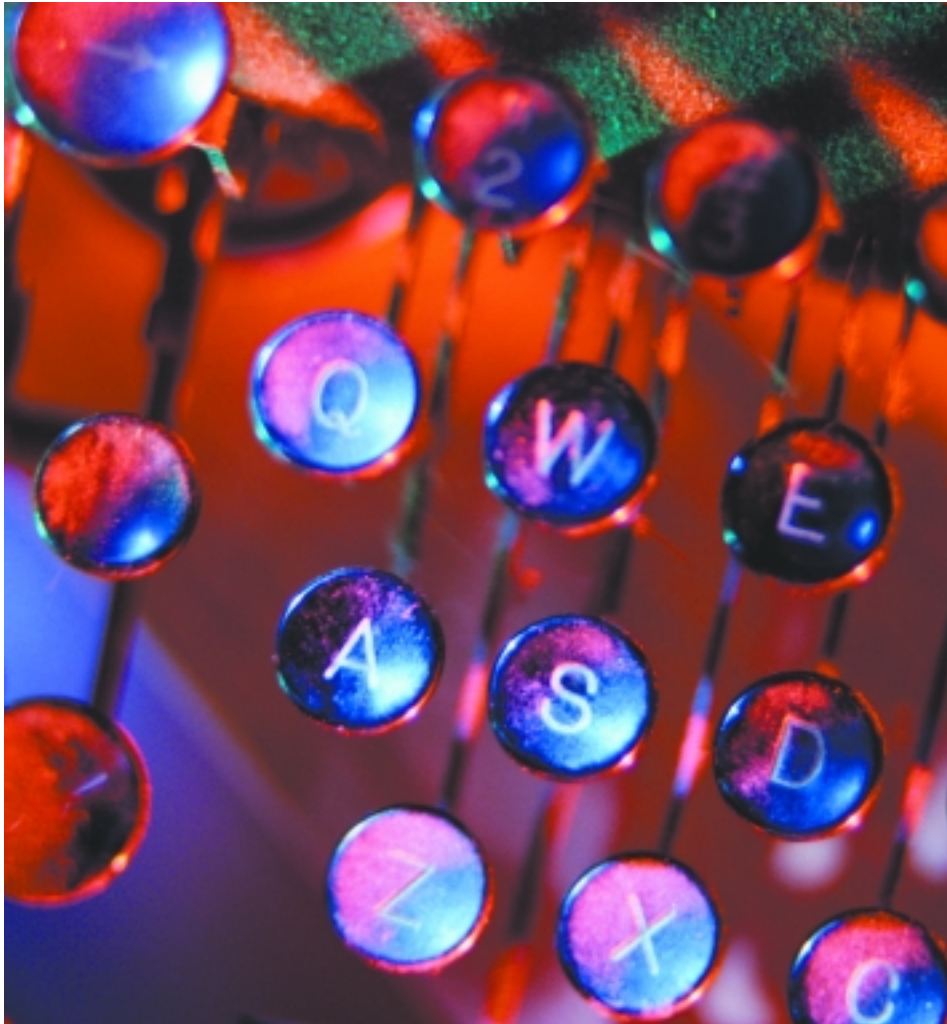


THE ENERGY MANIFESTO

Houston, we have a problem...



...A \$16 TRILLION PROBLEM.

The International Energy Agency (IEA) estimates that between 2001 and 2030, the world will need to invest \$16 trillion to keep the lights on. And, by the way, instead of moving toward cleaner, more sustainable energy, we are going to reduce the paltry portion that renewables presently occupy in our energy mix. More pollution. Less clean air.

Screw the IEA.

Fellow Canadians, it is time to take matters into our own hands. We can have a cleaner, leaner, more competitive economy with zero net emissions by 2025. Here is our ten-point Energy Manifesto.

1. Pay people for nothing. That's right. Most

of us are energy hogs, and could reduce our energy consumption by 25 per cent without affecting our quality of life one iota. The problem is inertia. Let's borrow a page from the Clean Air Foundation's programs of giving people cash for being green, and get our rumps in gear. The Ontario government paid \$293 million in 2003 alone to subsidize the rate cap on power prices. Take that \$293 million per year (or your provincial equivalent), top it up 25 per cent with the projected billions needed to upgrade the power transmission lines, and throw in another 25 per cent of the necessary billions that would otherwise be spent to ramp up our energy production for 'business as usual' projections. Throw that

cash at people as an incentive to use less energy.

2. Memo to the private sector: WAKE UP!

You are supposed to be in business to make money. There are billions of dollars you can add to your bottom line just by becoming more energy efficient. Just do it. Call the Canadian Industry Program for Energy Conservation at 613-995-6839.

3. Ramp up the building codes and get the architects on this. We have some of the best architects in the world. Let's sponsor a big-time annual contest for designing cost effective, smart looking, energy efficient homes and buildings and jack up building codes to make sure they get built. It's time to scale up Toronto's Better Buildings Partnership-- which has saved First Canadian Place a ton of money. And let's slap an R-2000 requirement on all new homes, so every new house will be energy-efficient and environmentally responsible (r2000.chba.ca).

4. Fuel cells à la oil sands. Right now, green power accounts for 1-2 per cent of our national electricity production. It could supply 100 per cent, but the potential grid-share of most green sources of energy is relegated to minority status (15-25 per cent max). That's because much of the green energy supply is intermittent, and not yet dependable. But what if we could, for instance, store and smooth out the surplus energy from wind power during non-peak times and use it during peak times? Electrolysers and hydrogen fuel cells do this. They solve the energy storage problem, but it's a three-to-one proposition: you need about three units of energy to store one. Sounds like a raw deal, but it actually makes sense as our power systems are built for peak energy times (hot summer days with air conditioners going) even though most of the time we don't need near this amount. This unused power capacity could be used during non-peak times to convert water with an electrolyser (like the ones Stuart Energy makes) into compressed hydrogen gas stored in a cylinder, which could be used with a hydrogen fuel cell to produce power on demand. This would reduce our required generating capacity by 25 per cent, according to Geoffrey Ballard. At peak times,

energy costs as much as 4-10 times more than it does during non-peak times. Twenty years ago the government gave a big boost to fuel cells, which is one of the main reasons we are world leaders today. It's time for Ottawa to step up to the plate again and pony up the same billions it did/does for the tar sands, then fuel cells will really take-off. Look what happened to Fort McMurray: with Ottawa's push and a little help from higher oil prices, the tar sands have went from a few hundred million dollar project, to a multi-billion dollar one. Oil industry chief Pierre Alvarez called it "the most successful piece of public policy in the past five years." Note to Paul Martin: Let's hear the wind, nuclear, geothermal, hydro, solar, and tidal folks say the same thing in five years.

5. Put a price on it. Promise to pay a reasonable price for green energy, and the market will deliver it. This method of offering a guaranteed price for green energy is up to eight times more effective at getting the initial green juice to flow, according to the French. Take a page out of Scotland's book, too. They managed to get Talisman Energy to help build \$1.3 billion worth of offshore wind turbines that will deliver electricity to over one million homes. With our abundant supplies of wind, solar (more than Japan and Germany), tidal, small hydro, geothermal, and biomass, we could get green power to 15 per cent of our total portfolio by 2010, especially if we use more efficient flexible wind turbines that are replacing the old standard model. Tell the union guys not to worry either: over 35,000 people are employed in Germany's wind sector. If someone complains about offshore wind turbines (or the bird fatalities), tell them to go fly a kite. Wind turbines kill far less birds than buildings do (less than 1/10 of one per cent), and by using suggestions from sources such as Flap.org, winged casualties can be kept to a minimum. Municipalities will, however, have to be more prudent and set aside room for renewable energy installations, as the 'not-in-my-backyard' types managed to thwart 75 per cent of planned wind projects for a period in the UK.

6. De-centralize the power. Make models, take down the roadblocks, and encourage people, new communities, condos, remote areas and First Nations reserves (like some are already doing with Breton Windworks) to make their own power. This cuts back on building and maintaining all those costly power lines.

7. Phase out free rides. Get a standard unit of account for offsets, carbon and other priority pollutants like NOx and VOCs. If the

NAFTA panel working on this is too tricky, give the EU a call and adopt their model. Clean air is worth something. It is not a right to pollute that air, so make corporations pay for the privilege of polluting. Set up a cap-and-trade system with a cap of zero, phased in by 2025--which happens to be the same time TransAlta has set for itself to reach zero net emissions. In the mean time, let's make sure polluters pay their own way (for all tradable emissions allowances/permits) right away. That means lifting the \$15 per tonne cap on greenhouse gas (GHG) emissions that Ottawa promised in the fall of 2002 (In Europe, companies will have to pay \$64 per tonne of CO2 emitted starting in 2005). As a market based system, the cap-and-trade approach will likely spur innovation and efficiency spin-offs once business puts their minds to it. Ottawa is not an insurance company, so time to consider phasing out the insurance coverage for the nuclear industry. Nothing against nukes as, according to Geoffrey Ballard, they would work handsomely powering up hydrogen fuel cells and are probably less risky than fighting oil wars in the Middle East and Eurasia, but why shouldn't they pay for their own insurance like everybody else?

8. Dirty coal is the enemy. Replace dirty coal with natural gas for the near term. To get over the 15-20 per cent renewables hump on the grid without jeopardizing our energy security pre-fuel cell installation, natural gas is a good play, according to Jack Gibbons at the Ontario Clean Air Alliance. It emits 40-50 per cent less CO2 than coal and almost no SO2 or NOx. It can also provide a good partner if it is teamed up with wind or other green power. Alan Greenspan is worried about the price of natural gas going up, but with liquefied natural gas (LNG), it's a global market. Substituting all coal for natural gas would raise prices by a manageable 15 per cent. In the combined natural gas-wind units, when the wind is not blowing, we could just fire up the gas, or maybe even a little clean coal, if it proves not to be an oxymoron.

9. Tit for Tat. Sell Petro-Canada and give the bulk of the cash to expand the mandate (to nearer term solutions) of Sustainable Development Technology Canada (SDTC), which is helping to provide investment capital for technology that will make Canada more sustainable and more competitive. The next generation of Iogen, Stuart Energy, Hydrogenics, Westport, Ballard, and Blue Energy are lurking in our midst. Let's inject some capital. Who knows, if we make green energy cheap enough, maybe we can avoid those apocalyptic scenarios where China and India take the

same path to development that we did. It makes sense. After all, SDTC's chairman is Jim Stanford, who also happens to be Petro-Canada's former chairman.

10. Move the economy and don't miss the train. Transportation is a major source of emissions and freight trucks account for one-third of the GHGs from the transportation sector. Rail carries roughly twice as much cargo as trucks and is only four per cent of the GHG problem in the transport sector, according to WESTAC. Get some intermodal transportation going, and take those trucks off long hauls. If we cut the hauls by trucks in half and put their cargoes on the train, it would reduce GHG emissions by 20 MT. We will also save a lot of money repairing the roads that get chewed up. Let's also make it easy for those folks from the burbs to get around by making sure there are time efficient public transit options. Let's give Sue Zielinski and her merry band at Moving the Economy a carte blanche to move our economy to smart cards so we can pop on and off multiple forms of transit without much hassle.

Regarding the beloved automobile, it's high time to put in place fuel economy standards for cars and trucks. Regarding cars on the visionary side, let's rev up Hydro-Quebec's plans to produce a low-pollution electric vehicle and while we're at it, see what we can do to take advantage of The Air Car (www.theaircar.com) that claims to be capable of a top speed of 110 km/h for 300 kilometres on one tank of fuel at a cost of just a penny per kilometre. Regarding big auto, Toyota plans to introduce hybrid versions of virtually every model in its range, starting with the Lexus RX sports-utility vehicle, and before the decade is out 40 per cent of Honda's sales are likely to be hybrids, according to Kenichi Nagahire, senior chief engineer in Honda's research and development department. Let's give a strong incentive for people to buy these cars like the \$2,000 Clean-Fuel Vehicle Federal tax deduction currently being considered in the US.

Fellow Canadians, rise and demand a market for which there is infinite and free [or at least clean and cheap] fuel. The power is yours. All you have to lose are your power bills. ☑

Toby Heaps tried to install a 9-metre-tall wind turbine off his 5th floor apartment balcony but the building management wouldn't let him.

Good Links:
www.cleanairrenewableenergycoalition.com,
www.kyotosmart.net