

Mayor's Symposium on Sustainability Green Energy

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1. It's the year 2034 (25 years from now) and Winnipeg has been wildly successful in implementing its sustainability plan. We have garnered international acclaim and are sought after as a "best practice" model for a sustainable city in all senses of the word.

Given that reality describe what Winnipeg looks like in 2034 in terms of (Green Energy)?

- Incentives / rebates / regulations (by-laws/laws)
- Education (of all ages focusing on present stakeholders; education about green energies that are already out there so people can make an informed decision)
- Selling green energy back to the grid (or localizing grids)
- Using sustainable power & transportation
- Creating urban wind farms within Winnipeg itself (can put on schools, tall buildings, etc using small wind turbines; 60% Germany's power is wind power . . . could argue that MB's Hydro power is not "clean")
- Smart electrical grid - with net metering; create our own energy with extra going onto the grid; charge energy by time of day (then people will use their energy when its cheaper during the day)
- Land fills into Energy - bacteria to break down compounds to make Hydrogen power cheaply (which can break down Tim Horton's cups, paper waste, etc)
- Citing Standards, By-laws - regulation to decrease amount of energy, increase cost of non-sustainable ways
- Tax Breaks
- Renewable Energy Street Lights
- Solar, wind - capitalized on roof top real estate for wind power
- Geothermal
- Policies for homeowners to retrofit existing homes to solar/wind/geothermal
- BioMass gasification at Brady Landfill (with methane gas)
- Evertrends program with Hydro (business pays the peak amount of energy; can bring renewable energy and store that energy to shave the peak off of energy use and pay less for the monthly bill since paying for the peak use for the entire month)
- Green Alternative Energies need to be the base . . . not the alternative and our other energies, like Coal/Nuclear could be the alternative (for the spikes in energy use)
- Social contract between admin and the citizens around the principles of energy use (What will city do to ensure energies are green?)

- Better transportation for people at Waverly West
- Full cost pricing on electricity, variable on time of day
- People would have sophisticated metering to know what the price of running their appliances are at that time of the day to use energy when cost is lower
- Monitor energy throughout course of year/month/day
- Hybrid electric meter system, Crown corporations should work together
- Shift from analog grid to digital grid (analog grid is so inefficient; get rid of grid altogether because encourages large scale energy facilities; need to be off the "larger" grid and sell extra energy back into the grid
- Small scale energy production projects are needed, not just large-scale hydro dams all the time
- Hydro should cater to Winnipeggers rather than rural Manitobans
- Transportation should be integrated, need electricity hybrids
- Should be an incentive for Manitobans to use electricity for their cars, should be cheaper to run car then dishwasher
- All houses & buildings as close to net zero energy as possible
- Both buying & selling power & electricity
- Wind turbines on office buildings
- Geothermal energy
- Look at energy conservation
- Look at smaller houses and at smaller houses
- People should be penalized on building over a certain sq footage depending on how many people living in the houses
- More bulk housing
- More dense neighbourhoods
- Share power in different ways/sharing power generation sources (community geo-thermal)
- Complimented with district energy (pipe hot water through many buildings to heat them on one generator)
- Need a national strategy to eliminate energy poverty (financial support; improve housing stock to eliminate energy poverty)
- Energy is intergrated wholistically into planning (planning cities/buildings, residential areas)

- Metrics (transfer energy – e.g. air conditioner makes heat which is discarded to the environment, instead use that energy somewhere else; district energy loop)
- First thing to do is avoidance, retro-fit buildings, well insulate it good (long-term static)
- Measure energy points and who is consuming the energy to determine where energy can be saved (Who do you measure and how?)
- Solar thermal can be more cost effective than geothermal (\$3,600 home to equip with solar thermal)

2. What is the most important first step or action that must be taken RIGHT NOW in order to realize this vision for Winnipeg?

- Starting with putting a plan in place and following it (the symposium is a good starting point)
- Good to have a plan, but need leadership that will continue with that plan into the future
- Youth will be able to make the change and make things happen (bring sustainability into schools so that students are educated on how to help the environment; comes down to funding... grants, etc to put this into place; Green Energy could be a necessity, not an option - should not be used just in political campaigns)
- Increase education for not only youth but people that are 18+ since they are the ones putting the plans into place (show leaders that being sustainable is profitable, need to protect the environment for the economy to thrive; walk leaders through the entire picture to see the bottom line)
- Citing Standards (What kind of standards do we have in place? Need an organization to put standards in place)
- Encourage different land-use forms (more town-houses / side-by-sides)
- District Heating
- Shift of Mindset
- Offer incentives to homeowners to create energy to sell of our Hydro for more else where (need Hydro to offer money by you saving money because they can sell it elsewhere for more)
- Street Lighting (power can come from renewable energy - not Hydro)
- Younger Generation is pushing forward “green” ideas, education for older people is necessary
- Base-line samples & Benchmarks are needed

- Set a good example for people to follow (pilot projects)
- Small wind turbines on municipal buildings (need incentives to make this type of energy competitive; role of municipal government in this; current admin in city needs to develop a strong policy that is like a social contract for energy use and land use, and sustainability; baselines & standards; city needs to take a leadership role in this)
 - Something needs to be done with existing structures (as well as new ones into the future)
 - Competitions in schools to see who can build the best wind turbines
 - Link financial incentives with green energies
 - Provide financial incentives with becoming more energy efficient (City could supplement with tax incentives)
- Province can change tier system so its progressive, the more energy you use, the higher the rate gets
 - Need metrics in place, can't manage what you can't measure (need a system to track energy usage as a baseline)
 - City could participate with CaGBC Canada Green Building Council's Green Building performance Initiative
 - If everyone uses same system, can benchmark
 - If everyone uses same data base, can aggregate energy usage
 - Should be online access
 - Rate all different Green technologies to determine pay back (to determine if geothermal is way to go or another tech that is more green to go in the long run; have the knowledge and information out there so it is easier to make an informed decision on the most green thing to be doing)
 - Have feedback in real time on our energy consumption. If not in real time, then on our energy bill to let people know if their energy consumption is average, above or below (Installation of smart meters)
 - Social marketing
 - Need to make immediate changes on property tax assessment. If install geothermal/solar thermal, that increases value of house so taxes increase so it does not become an incentive. Tax structure needs to be changed so people making green changes are not penalized.
 - Plug-in hybrids to the electric grid to contribute to the grid (sell electricity to the grid from electric cars - car could give electricity back to the grid during peak hours while plugged in; energy could be used that is not harnessed yet; vehicle fleet could store the energy that energy facilities can't)

- Educate people on LEED, easy access to the checklist so people can make better choices. (educate people on the basics; use human power through walking / working out to produce energy)

3. Who is doing good things right now in this area that we can learn from? (best practices, good models, studies, websites, etc.)

- Sweden has sustainable Transportation (bike lanes)
- Germany (Citing standard)
- Alternative Village at the U of M (Faculty of Engineering & Architecture)
- Vancouver (Planning transportation structure Hierarchy - Pedestrians, then cyclists, then Transit, then Commercial transportation, then multi-occupant vehicles, then single-occupant vehicles)
 - Mississauga (carpool lane)
 - Manitoba (Geothermal heating & cooling; we are a leader but still small part of buildings, we could build on that and move forward; had an opportunity with Waverly West to do geothermal in every house but was neglected b/c of lot size - should have been mandated)
 - Vincent Massey (wind turbine on the school)
 - Morris (purchase 3 1.2 kw/h wind turbines)
 - Nano-based paints - photovoltaic paint
 - Dock Side Green in Victoria (Retail/commercial & residential, are selling more energy back to the grid than is being used - Energy efficient buildings)
 - Develop a waste oil initiative for waste veggie oil
 - California (Plan for 1 million solar panels by 2020?; BC is following with 100 000 solar panels; MB needs to think what they can do)
 - Germany (wind power; heavy investments in solar power)
 - Denmark (solar & wind power; has an island that is dependent on only renewable energies)
 - Winnipeg (1909 - district heating system; had largest street car system in Canada with hydro power)