Squamish Community Energy Plan Dialogue Series 1
Session Notes

Feb 27 2008

Small Scale Renewable Electricity

- Tidal energy – is it possible to consider tidal channels?
- TB – this was not specifically looked at, only the potential for tidal bays
- (AB – very unlikely due to technology maturity, high capital costs.)

- Is waste to energy a possibility as in Europe?
- TB – generally only feasible at large scales
- BF – also potentially controversial

- Solar hot water: not part of this module scope, but might be more economical to pursue
- May be resources available (e.g. 10000 solar roofs/Innovative Clean Energy Fund, the latter geared for larger project)
- Geoexchange also more practical

- LG renewable requirements – i.e. like Merton Rule
- successful in Europe; LGs in BC don't have the direct jurisdiction
- local context: Spain and UK electricity supply is fossil based; limited opportunities for large scale renewables. In BC we have many more options for medium to large scale renewables to be implemented at the grid scale.

- Rec centre opportunities – needs a new roof; could this be an opportunity for solar PV
- bigger opportunity may be solar water preheating
- also looking at heat recovery from adjacent force main

- Dockside green: abandoned co-gen, so not doing net metering

- Suggested prioritization:
- solar thermal & geoexchange
- district energy with co-gen
- solar PV

- Also, suggest a focus on small scale biomass heating (e.g. individual home wood combustion technology)

- Question: what is interest of DoS in small development policy changes?
- Responses:
- Initiatives should not be voluntary (not effective)
- Need to rework subdivision control bylaw
- Stretch to put into bylaw form; could come in as variance (one by one basis)
- Take us to best practices suggestions; what would fit in best
- District would like to encourage green/brown devels that use these frameworks – eg net metering
- Take as progressive position as possible, but not punitive; not yet clear the implications of integrating these things into policy

- Substantial infrastructure costs existing; need to add value

- What about tax incentives?
- District has not gone there
- Good uptake on ESP program; open the door for residents and show what they can do; this will enable early adopters
- Tax exemptions would probably need to be in big areas (eg waterfront); would need to show clear benefit
- Show tangible revenue offset
- Squamish saw itself participating in programs – eg. govt programs or within DoS; to get people into mindset of engagement
- e.g. DoS did a lot of work on wind; lesson learned – don't spend too much energy
- Work on capacity building
- Flag innovative opportunities in early, big projects to stimulate champions to emerge on development side
- DoS should undertake to work with waterfront landing on renewables uptake; could be an immediate win; some guidance there would be useful
- Oceanfront is community asset; we could go into those directives easily

District Energy

- Interplay between planning & DES – eg. can tweak plans to make DES more feasible
- how to advise on tweaking land use plans to improve DES feasibility?
- Issue: how much cooling to allow for in residential devel.? We want to maximize passive design, but developers may have preferences toward air conditioning; however many developers may opt for passive design features
- Could potentially cross Blind Channel fairly easily (already needs to be done for water supply)

Discussions

- N Pottinger: front end infrastructure costs are high; distributed systems may be better from this perspective; access to sewer heat; builder partners may need to buy in;
- Triack: lots of biomass available
- Cooling systems do not seem to be a major need for Squamish except in particular scenarios
- NP: willing to talk to DoS about NEUs
- TB: different models of NEU development are possible; recommend: 1. do a business case; 2. who should own/operate
- NP: 3-4 large devels around waterfront; opportunity to connect them for sharing resources, perhaps to form a single utility; BC rail's project is only about 100m away; could also tie into Westmana and Oceanfront
- Timing: would need to get on it quickly to take advantage of first of the major devel; phasing is important (eg pump station will come in Ph II)
- N Van: zoning bylaw requires hydronic systems and discussion with LEC; getting pipes into ground to avoid ripping up streets is key
- Impact on unit costs: business case must be competitive (eg. 10% of operating costs) with conventional servicing; there are other benefits such as being insulated from volatile heating energy pricing

- Design guidelines can prohibit electric heat in new devel
- Terasen: from construction perspective: hydronic +~$1200/unit up to $5-6k for complete heating system with fan coil, compared to electric, but should consider scaling down other infrastructure in building associated with electric heating
- The hydronic heating part of construction is not part of DES
- DoS: can we separate district energy costs in legal agreements – recognize lower operating costs – esp. for affordable housing
- Need to demonstrate economics for builders to ensure buy-in; long-term payoffs are met with skepticism for many builders
- Key question: what is base case? ie. electric heating may be more and more difficult to implement based on new BC code; maybe not realistic for base case, and we need a realistic base case
- Could be increasing electricity demand from increasing ventilation requirements?

Financing feasibility studies

- Ideally developers should be involved; note LEC – N Van was developer
- to what extent should DES lead?
- to what extent should there be private involvement, at what stage?
- LEC: need to involve developers up front – day 1
- Design needs to ensure developers, builders can meet performance requirements; need guidelines that allow verification including during commissioning of design
- Is DoS looking to own/operate, or developers to do same?
- Does the district want to maintain an easement along the waterfront for interconnection? How can we share piping, culverts, rights-of-way, etc. – logistical issues
- Intuitively: DoS should be going to high ground; there is an intent to continue to follow through with next steps. Council likely to support this.

Some discussions to follow offline; this needs to help TOR for next study steps.
Draft collaborative plans with 4 landowners – discuss budget etc.
Maybe Waterfront Landing does not need to carry weight of analysis; DoS should take lead, and approach it as a holistic, integrated system.

Buildings

Presentation 1 - BC Energy Plan – Stephen Hall, Energy Mines and Petroleum

2 proposals for building code changes

1. Part 9 - EnerGuide 77

2. Part 3 – ASHRAE (letter of assurance)

Former common practice = Energuide 69, Add high efficiency furnace, higher insulation values etc. to get to 77

The size of the building has an impact on Energuide rating

Energuide also takes degree days into consideration

Energy Efficiency Act

PST exemptions for energy efficiency equipment have been expanded. Inlcudes fridges, instantaneous water heaters

We don't regulate until market has been transformed

Future priorities – see presentation

Net Zero Energy Homes

Province-wide demo program for new net zero energy homes is being introduced

National forum yesterday on Net Zero homes

North Saanich House (1993) – Bob and Verner (?) Duncan. No mechanical heating system

Net Zero homes would save 878 GwH /yr by 2021

CMHC has a net zero homes program called Equilibrium

Questions

How would builders get approvals?
-Stephen suggests using HOT 2000 prior to audit to be sure that building meets code
-There will be requirement of blower door test
-But no requirement for building permit stage – Shaun thought this odd.

Doug Day – we achieve Built Green through geothermal but there is no money from government to encourage this. We are building a Net Zero energy House. Primarily will achieve this using solar hot water and PV electric.

Presentation 2 - Susan Rutherford and Taylor Zeeg

3 components to the study: 1) Policy 2) Checklist 3) Educational materials

Questions/Comments

Brent – we have to allow time in our schedule for all the work that needs to be done to implement new policy. Concerned that we spend more time on the encouraging approach rather than the punitive approach.

Doug Day – concerned that we are seeing more regulatory approaches

Shan – surprised at the scope of what we are discussing here. If fully understood, would likely have the entire development industry here.

We are missing the infrastructure piece – the DoS is requiring us to meet many other standards which we think are not applicable in today's environment especially when

the DoS is requiring smart growth. We are not being allowed to apply the same variances that have been approved for other developers.

Subdivision control bylaw is completely out of sync with Smart Growth principles. Susan Rutherford has produced table of where existing bylaws need changing.

Other initiatives such as affordable housing depend on density bonusing as well. We need an amenities bylaw that specifies the list of amenities that developers are required to provide.

Wonder if it is an effective use of District's resources to focus on these policies because the market is going to towards energy efficiency as is the Province.

Clearly, developers are going to prefer incentives.

Brent – glad that we introduced site clearing bylaw – some regulations are the DoS responsibility. However, concerned that could be overly bureaucratic. See this initiative as a win-win and we should take the time to do this properly.

Helen –
DPS guidelines should be very clear
Rezoning policy – has to be flexible
Tax exemption – will suit some developers if they will hold property
Density bonusing – always good for developers but caution re height/bulk.
Successful in other municipalities
Phased development agreements – legal is a nightmare
Heat loss calculation – for larger buildings only
Checklist – standard, takes only half an hour

3 types of clients:
1) The converted – will do it anyway.
2) The not converted – won't change no matter what.
3) In between – incentives important.

Each type of developer has different requirements and will respond to different incentives and requirements.

Checklists could be useful if not too onerous. Use as a summary of existing policy and to identify where project could be strengthened.

Transparency and consistency is important.

Currently, the DoS plans through the budget.

Appreciate the consultative approach BUT tired of hearing about DoS HR issues.

Education and Recognition

Next time

Municipal Buildings

Presentation – Shaun Martin

Brent – need to consider community objectives as well e.g. location of new City hall on the waterfront.

Can also consider leadership potential of municipal green buildings.

Are there buildings that we should be focusing on?

We want to use this process to start having a dialogue with council about what buildings need investment.

Is City Hall retrofit a prudent investment for us?

Mike Wilson – look at deep comprehensive, long-term retrofits. Don't do a cheap and dirty retrofit because it hamstrings you in the future because then you can't justify investment. Municipalities have the ability to borrow cheaply and can look at long-term payback. As long as you can finance the loan payments with the savings then you are ahead. These kind of investments are most practically funded through long-term municipal debt from MFA.

Ralph – not looking for investments right now. Prefer external financing but unlikely. More likely a "capital" (internal) project. Municipal finance authority will provide financing? Yes, but already bumping up against our borrowing comfort. If we can guarantee payment of our principal and interest then we might have a project. Brennan Park (using ice rink heat) is more likely to be funded by FCM GMF grant.

When looking at payback analysis should factor in the new carbon tax.

First budget – around September.

Need to move forward with FCM funding for example.

ESCOs – MCW, Honeywell, Amaresco will guarantee energy savings and will provide financing but still better off going to MFA. 20 year rate = 4.5%

3 municipalities have pursued ESCO contracts – City of Vancouver, Burnaby and District of Saanich. ESCO financing is still on your books.

Grant programs – may pay some of the costs, not 50%.

New Buildings
Unlikely that we will be constructing a new building before 2010. However, useful to have policy in place as it gets staff and public aware of our commitment.

LEED Gold – perhaps, if the lifecycle analysis supports. Show leadership.

Decision analysis – how to decide what investments to make?