



Clean Energy

OPPORTUNITIES IN THE LOW CARBON ECONOMY



THE NEW BIOECONOMY
ADDING VALUE TO BIOMASS

June 6-8, 2018. Prince George, BC

Tim Hoy

www.cleanenergyconsulting.ca

Dream Small and Start at Home

At a community scale, sustainability will only be economically achieved when all waste streams are properly utilized or disposed of.

Rapidly Changing Global Economy

Transformational shift in values

- ✓ Developed countries and urban centres
- ✓ Banks and large corporations
- ✗ Communities and individuals

Fundamentally, Can We Change?

- Banks control funds, but don't want risk
- Corporations can, but prefer the status quo
- Politicians want to, but are distracted
- Individuals could, but want to maintain lifestyle

Community Outcomes

Desired outcomes are:

- ✓ Eliminate diesel generators
- ✓ Solutions for landfills nearing end of life
- ✓ Upgrade inadequate waste water treatment systems
- ✓ Secure markets for waste e.g. sawmill residuals
- ✓ Manage wildfire interface fuel loads
- ✓ Renew or replace aging infrastructure
- ✓ Stop the hollowing out of rural communities

Sustainability

- ✓ Alignment with community vision
- ✓ Energy plant provides utilities – heat and power
- ✓ Foundation for add-on modules
- ✓ Water treatment
- ✓ Soil remediation soils
- ✓ Community food supply
- ✓ Turn waste to energy
- ✓ Enable sustainability

Re-energize Rural Communities

Biomass should be considered a central component of the mix in a low carbon economy powered by renewable energy, as it provides significant benefits to communities, utilities, and the environment.

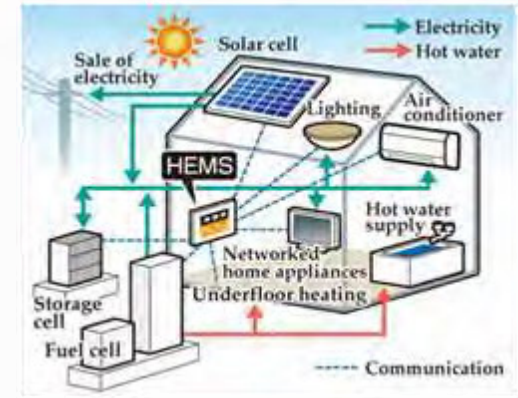


What Scale Enables Change?

- Household Scale – too small.
 - Results in multiple replications of furnace, air conditioners, and water heating installations

- Large Scale (KiOR) – too big. But not too big to fail.
 - Capacity: 1,500 tpd facility
 - Spend: \$600,000,000

- Community Scale – just right
 - Sized to biomass availability in economic radius
 - Fits with local industry



A New Lens

- ✓ Deal with waste first
- ✓ Solve community problems at a community level
- ✓ Do the hard things, but keep it simple
- ✓ Recognize biomass as the unique renewable energy source it is, providing a responsible alternative to incineration, landfilling, or abandonment for residuals



A New Lens

- ✓ Pay the real price for energy and products
- ✓ Build solutions to problems, don't search for problems to fit technologies
- ✓ Level the playing field and eliminate subsidies on unsustainable behaviors
- ✓ Leadership is required to do the right thing



Solutions lie in our Communities

- Technology is available now
- Barriers - perceptions of risk and economics
- Why not try something different?
- It starts in our communities!

At a community scale, sustainability will only be economically achieved when all waste streams are properly utilized or disposed of.

We Must Decide...

“Go Big or Go Home”

or

“Dream Small and Start at Home”



Photo: Chuck & Susan Chin



Thanks for Listening

Clean Energy Consulting is passionate about developing and implementing practical, economically viable projects for sustainable energy supply by working with industry and communities to turn waste into energy, liabilities into assets, and opportunities into reality.

Integrity · Excellence · Results