

Tuesday, March 10, 2009 (file cac201)

To: Dan Breedon

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Subj: Carbon Free home, Public Service communication, laser applications and biodiesel

Ref A: S. & R Hren, the Carbon Free Home, 36 Remodeling Projects to Help Kick the Fossil-Fuel Habit, Chelsea Green 2008 Butte Lib 644H

Ref B: W, Lehr, N Jesuale, Public Safety Radio Must Pool Spectrum, IEEE Communication Magazine, Vol 47, #3, March 2009, pp103-109

Ref C: Google, Terrawatt Laser Applications, Also see History Channel & UCTV for March 10, 2009 showing details of the Lawrence Livermore National Ignition Facility

Ref D: W. Kemp, Biodiesel Basics and beyond, Aztecs 2006

Discussion:

Ref A by a couple in North Carolina is one of the best low level mitigation of global warming and dependence on foreign oil I have found. Bill McGibben observes that "its hard to imagine a more comprehensive and comprehensible, guide to making your home work for you and for the planet, inside and out. It's frugal, it's sensible, and it will help!" Simple inter-seasonal water storage and highly susceptible wildland fire problems are not treated presumably because of the difference between our climate and North Carolina.

Ref B describes flexible and adaptive radio architectures for portable public safety services that likely will be required in the future. Sharing a common pool of spectrum or dynamic spectrum access (DSA) is the primary concern recognizing that modulation type and data structures are of interest. The legacy systems are dedicated, narrowband and overly restrictive. Butte County will need to keep on top of policy institutions such as the National Planning Committees (RPCs), Incident management system (NIMS) within the National response network (NIMS). FEMA is the lead agency, e.g. [www.fema.gov/nrf](http://www.fema.gov/nrf) or NIMSW or ICS. Pool managers need to recognize portability requirements over large geographic areas. Getting started and incremental deployment is a challenge. Cognitive radio (CR) software for management will be a key part of the mix.

Ref C describes the variety of applications for high power lasers that may be of interest to Butte County. Experiments in England are underway to direct lightning away from critical facilities or areas by creating ionization paths by high powered lasers. Mitigating Northern California's late summer dry lightning problem is a case in point. The validation of the Lawrence Livermore pulse facility in the next few months that can potentially output 20 times the input power over nanoseconds every 3 hours is to be followed by commercial power demonstrations that can range up to 10/second by 2050. Terrawatt laser spectrographic systems have been developed for measurement of the outputs of various combustion

systems and naturally occurring sources (e.g. terpenes from forests) over long distances. A glance at the Google lists of web sites for terawatt lasers can give a sense of the magnitude and diversity of effort that is being expended in this area.

Ref D supplements a number of texts on the subject that I have previously reviewed. Special attention is given to Wesites such as [www.irs.gov](http://www.irs.gov) (form 637), [www.biodiesel.org](http://www.biodiesel.org) in the U.S. and [www.greenfuels.org](http://www.greenfuels.org) in Canada.

Aside: I was amused to see in the 3/10/09 Enterprise record section on review of Butte County History that showed that 75 years ago Mr. White, the lead Butte County supervisor challenged an individual who was applying for a permit for a dance hall to a duel over a claim of lying. This suggests that when the General Plan Update is completed perhaps we could cap the climax with a White memorial duel between the board of supervisors and the Butte County Environmental Council members on the field of honor featuring pies at 5 paces supplied by the Citizen's Advisory Committee!