

Building Biomass Infrastructure

Shared by Norma Santiago, 4/20/21

Why a Biomass Infrastructure: California's natural resources economy is at risk due to the current conditions of our forests which negatively impact public health and safety, critical wildlife habitat, and watersheds vital to California's water supply.

Considerations:

1. Demand:

a. **Governing documents:**

- i. 2014 Safeguarding California: Reducing Climate Risk, the state's climate change adaptation strategy is the overarching document. Specific implementation strategies in the Safeguarding California: Implementing Actions Plan.
- ii. Forest Carbon Plan
- iii. Governor Brown's Proclamation of State of Emergency as a result of growing tree mortality
- iv. Sierra Nevada Conservancy Watershed Improvement Program
- v. Resilient Lands and Water Initiative
- vi. California's Wildfire and Forest Resilience Action Plan (January 2021)

2. Supply:

a. **Governing Documents:**

- i. USFS Forest Plans
- ii. USFS Cohesive Landscape Strategy
- iii. 2014 Farm Bill – Good Neighbor Program
- iv. Safeguarding California Plan

3. Market

a. **Resources for analysis and identification:**

- i. California Assessment Wood biomass Innovation Interim Report (6/15)
- ii. US Biochar Initiative
- iii. Joint Institute Recommendations to Expand Wood and Biomass Utilization in California (To date, 4/21, still in draft form)
- iv. Recommendations to Expand Wood Products Markets in California - *A Report to the California State Legislature in Compliance with S.B. 859 (2016). Submitted by the California Natural Resources Agency on behalf of the Wood Products Working Group October 2017.*
- v. CA Office of Planning and Research (OPR) California's Engagement with Biochar
- vi. An online application for decision support in siting woody biomass-to-electricity facilities in California – *being developed by UC Davis. It is a "web-based decision support system (DSS) application that allows users to quickly evaluate economic feasibility and environmental performance potential."*

Components:

1. Economic Infrastructure
 - a. Cost benefit analysis
 - b. Job creation
 - c. Revenue generations
 - d. Market development
 - e. Community revitalization and development
 - f. Investment attraction and opportunities
 - g. Risk profile/assessment

2. Environmental/Physical Infrastructure
 - a. What is going to be built
 - b. What is the environmental impact
 - c. Size and scope and why
 - d. Impacts on other infrastructure sectors
 - i. Waste
 - ii. Water
 - iii. Communication
 - iv. Transportation
 - v. Energy

3. Social Infrastructure
 - a. Education
 - i. Vocation (Workforce development)
 - b. Housing
 - c. Health care
 - d. Recreation
 - e. Public Safety

Goal of business development strategy (business plan):

To demonstrate the feasibility of a biomass infrastructure that provides environmental and social benefit while stimulating economic growth.

1. Where are we
 - a. Description of current conditions
 - i. Condition of forest due to overgrowth
 - ii. Drought conditions adding to already increasing risk of wildfire
 - iii. Increasing insect infestation
 - iv. Watershed impacts from overgrown forest

2. Issue statement
 - a. Problem that is going to be solved
 - i. Public safety
 - ii. Response to climate change
 - iii. Renewable energy sources
 - iv. Quality of life
 - v. Expanding wood innovation markets
 - vi. Ecosystem services
 - vii. Watershed restoration

3. Solution
 - a. Development of a biomass infrastructure that address the issues indicated above
 - i. Identify components
 1. Supply
 2. Demand
 3. Market
 - ii. Flow chart
 1. Going from forest to market

4. Developing the business model
 - a. Current model -- \$140 million board feet per year
 - i. Supply
 - ii. Environmental impacts
 - iii. Risk/Benefit Analysis
 - iv. Economic Analysis
 - v. Markets served

- b. New Model – Forest By Product Processing Center -- number of board feet dependent upon what each forest can sustain
 - i. Supply
 - ii. Environmental impacts
 - iii. Risk/Benefit Analysis
 - iv. Economic Analysis
 - v. Markets served
 - vi. Use of mobile technology

- c. Green export

5. Next steps

- a. Developing of a project team
 - i. Supply side
 - 1. USFS
 - 2. SPI
 - 3. CalFire
 - 4. Sierra Nevada Conservancy WIP

 - ii. Demand
 - 1. Consumer
 - a. Cross Laminated Timber
 - b. Biochar
 - c. Biofuels
 - 2. State
 - a. Jobs
 - b. Economic Development
 - c. Meeting green house gas reduction targets
 - 3. Local
 - a. Jobs
 - b. Public safety
 - c. Meeting green house gas reduction targets

- b. Market analysis and product development
 - 1. Expansion in current markets
 - 2. Opening new markets
 - a. Cross Laminated Timber
 - b. Biochar
 - 3. Innovation

- c. Evaluation of technology availability and sustainability

- d. Financial analysis and identification of potential investors

- e. Test alignment with current initiatives and engage potential partners in the development of the business plan
 - i. Sierra Business Council
 - ii. The Sierra Institute
 - iii. CA Office of Planning and Research
 - iv. CA Sustainable Growth Council

6. Plan Implementation