

Biomass Utilization and Stewardship Conference

Sonora May 22, 2008

Biomass Planning Sierra National Forest

Woody Biomass Utilization (WBU) is defined as the harvest, sale, offer, trade, and/or use of woody biomass. This utilization results in the production of a full range of wood products, including timber, engineered lumber, paper and pulp, furniture, and value-added commodities, as well as bioenergy and/or biobased products such as plastics, ethanol, and diesel.

Small-Diameter Utilization (SDU) refers to a more specific size class of woody biomass that includes small-diameter trees that do not meet minimum specifications for sawlogs, but are large enough to be used as posts, poles, tree stakes, small pulplogs, or other similar forest products

Goals: The goals of **Woody Biomass Utilization** are:

1. **Reduce the cost and improve the quality** of forest, ... restoration or hazardous fuel reduction treatments. Reduce forest restoration cost and increase the use of woody biomass as a renewable energy resource through environmentally sound actions which also provide economic opportunity in rural communities.
2. **Reduce the risk of catastrophic fires** through adoption of widespread WBU practices.
3. Provide a **sustainable and reliable supply** of woody biomass ...
4. Develop and implement consistent and complementary policies and procedures that will **maximize Federal efficiency and effectiveness** of WBU.
5. **Restore at-risk forest**, ... ecosystems to healthy and resilient conditions.
6. Develop **sustainable, living wage jobs** and appropriately-scaled industries in
7. Enhance national security through **clean, renewable, diversified energy production**.
8. Contribute to the **stabilization of greenhouse gas** concentrations.
9. Develop and apply **appropriate technologies** and provide tech. transfer to stakeholders.
10. Substantially divert biomass currently directed to landfills to higher value use.

How is a **Small Diameter Utilization-Biomass Project** ... integrated into the local land management program?

How will harvest of biomass help achieve the **Desired Future Condition** and where are the highest priority areas ... for treatment?

How large a project is being considered: 1 or 100,000 acres, or more?

What are the **existing markets**? Are there local crews to perform the work?

Is **biomass currently** being harvested and utilized in the area, and if so, has a rapport been established with the purchasers and mill owners?

Is there **support** from the local community and environmental groups?

What are the short-term (1 to 10 years) or long-term (10 to 20 years or more) **sustainable needs** for integrating SDU-biomass treatments into the program?

How many **acres per year** would be treated?

What size is the **budget and workforce**?



FSToday

DOE Provides Funding Incentives for Renewables

May 16, 2008

Small-Scale Biorefinery Projects

The DOE has selected three projects in which the agency plans to invest up to \$86 million over four years (FY 2008-11) to support the development of small-scale cellulosic biorefineries.

Renewable, Efficiency Loan Guarantees

The DOE says it will send out solicitations next month when it will offer up to \$10 billion in loan guarantees for energy efficiency, renewable energy, and electric transmission projects.

Biomass Research

The DOE is offering up to \$7 million dollars in federal funding over two years (FY08-FY09) for research and development into advanced conversion technologies for creating clean liquid fuels from renewable biomass.



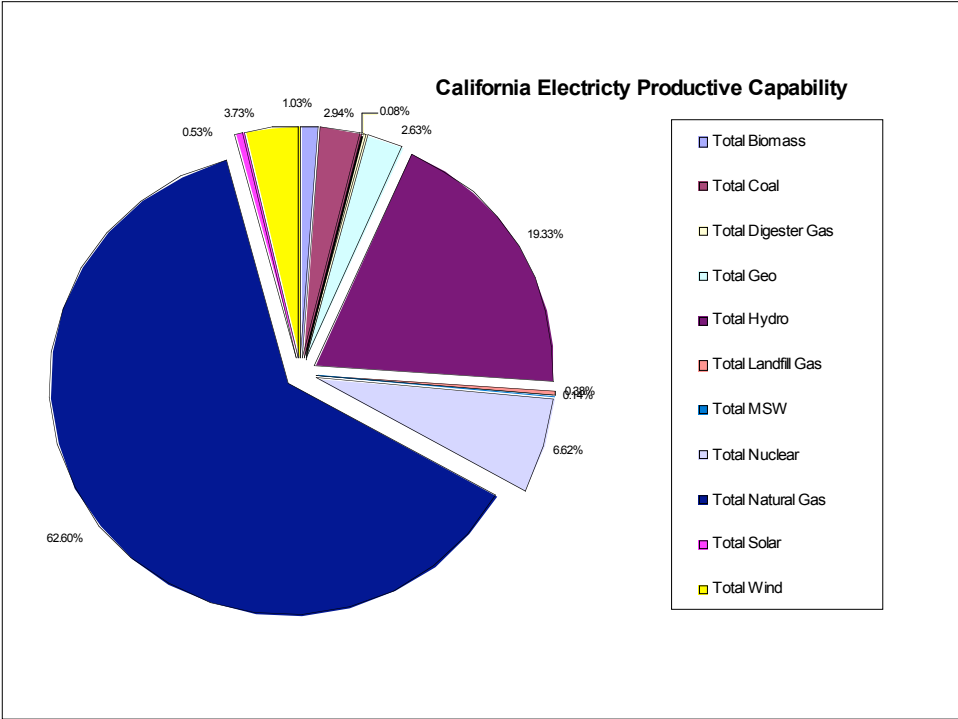
Renewable, Efficiency Loan Guarantees

The **DOE** says it will send out solicitations **next month** when it will offer up to **\$10 billion in loan guarantees for energy efficiency, renewable energy**, and electric transmission projects. The \$10 billion will be part of a larger \$38.5 billion loan guarantee package that will support a variety of energy technologies.

Selection criteria for the clean energy projects will **focus on the avoidance of emissions of greenhouse gas emissions and other air pollutants; the speed at which technologies can be commercialized; the cost-saving potential for consumers; the prospect of loan repayment; and the potential for long-lasting success of these technologies in the marketplace.** To support the launch of the solicitations, DOE has also published an implementation plan for the loan guarantee program.

For more information, go to **<http://www.energy.gov/news/6152.htm>**.

The loan guarantee program Web site can be found at **<http://www.lgprogram.energy.gov/>**.



SNF FY 2008 Program

District	Sale	Ccf	Mbf	Marked	NEPA	Accomplish Ccf
High Sierra RD						
	Hazard Tree Program	3832	2446			2271
	Green Thinning Program	0	0			0
	HSRD Total	3832	2446			2271
Base Lake RD						
	Hazard Tree Program	1671	1205			0
	Green Thinning Program					
	Sugar Pine Thinning	8000	4000	No	No	2400-13
	Squirrel Thinning	829	426		No	Yes
	Gaggs Thinning	594	302		No	Yes
	BLRD Grn Prgm Subtotal	9423	4728			0
	BLRD Subtotal	11094	5933			0
	SNF Haz Prgm	5503	3651			
	SNF Grn Thin Prgm	9423	4728			
	SNF Total FY	14926	8379			

Sugar Pine Thinning is an Adaptive Management Study Project to test the SNFPA (Framework Plan).

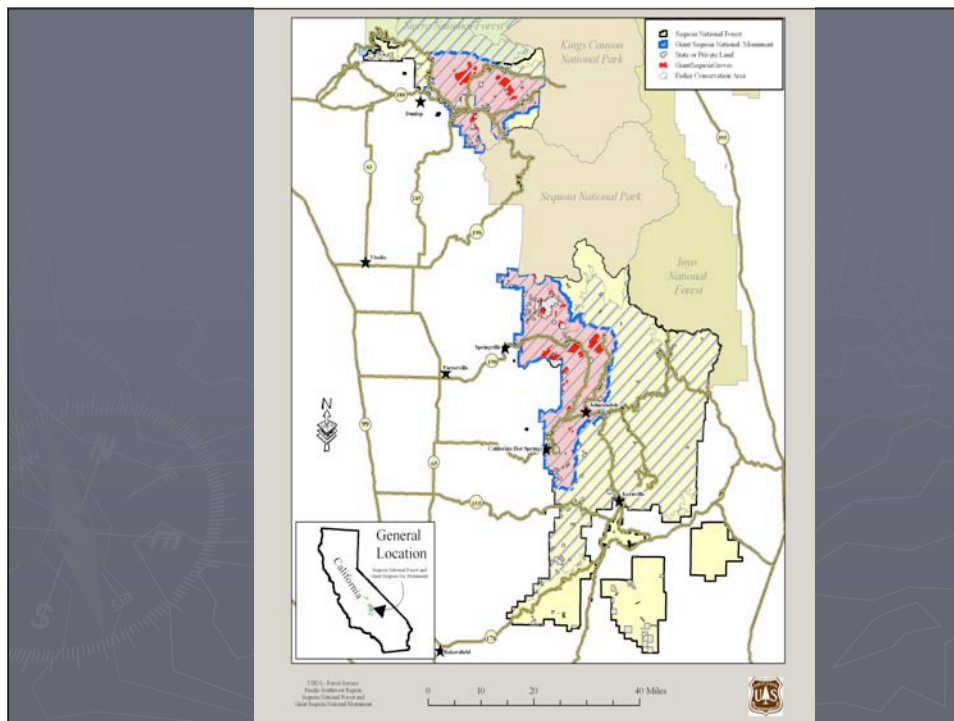
SNF Experience

- ▶ Timber Operators have not been experienced or interested in Service opportunities
- ▶ Service providers have not been experienced with logging or markets
- ▶ Most opportunities have been on smaller scale projects
- ▶ Larger entities interested in biomass processing have approached the Forest as to its capability to provide large constant material stream for processing.

PLANT NAME	COUNTY	PRIMARY FUEL	ONLINE MW	Dist. Miles from Sugar Pine (Miles)	Haul Time MapQ @ 40 mph
SPI-SONORA	TUOLUMNE	Wood Waste	3.50	92	2:01 2:18
PACIFIC ULTRAPOWER CHINESE STATION	TUOLUMNE	Wood Waste	27.50	82	1:50 2:03
MADERA POWER LLC	MADERA	AG. & Wood Waste	25.00	52	1:04 1:18
MENDOTA BIOMASS POWER LTD	FRESNO	AG. & Wood Waste	33.00	89	1:42 2:14
RIO BRAVO FRESNO	FRESNO	Wood Waste	28.00	85	1:40 2:08
DINUBA ENERGY INC.	KINGS	Natural Gas	12.00	84	1:33 2:06
DELANO ENERGY CO. INC.	KERN	Wood Waste	49.90	132	2:10 3:18
SIERRA POWER CORP.	TULARE	Wood Waste	7.00	132	2:19 3:18
MT POSO	KERN	AG & Wood Waste (COAL)	63.64		
% State Production Capability	26.67%	Total Biomass	185.90		
% State Production Capability	1.03	Total Biomass	697.00		

SQF FY 2008 Program

	Status
Hume Lake RD 2000 ccf hazard tree salvage, Hume Lake Hazard Tree 500 ccf, Delilah Terrace thinning (service contract w/imbedded 2400-2 deck)	NEPA DM Appealed NEPA Done (In Contracting)
Tule River/Hot Springs RD 800 ccf hazard tree salvage, North Road, Hwy 190	NEPA DM Done (No Appeal) (In Contracting)
Kern River RD 600 ccf Hazard Tree Salvage, Black Rock Hazard 2600 ccf hazard and fire salvage, Vista 3800 ccf green timber awarded (Clear Creek).	NEPA Done (Appealed) (Threatened Litigation) (In Contracting) No NEPA In Litigation
Alaska Flat for FY 2009 implementation as a stewardship project.	



PLANTNAME	COUNTY	OWNER	Genral Fuel	PRIMARY_FUEL	ONLINE_MW		
WILBUR WEST POWER PLANT	CONTRACOSTA	GWPOWER SYSTEMS	COAL	PETROLEUM COKE	2280	1.1%	
WILBUR EAST POWER PLANT	CONTRACOSTA	GWPOWER SYSTEMS	COAL	PETROLEUM COKE	2280	1.1%	
US STEEL RXC INDUSTRIES	CONTRACOSTA	GWPOWER SYSTEMS	COAL	PETROLEUM COKE	2280	1.1%	
GWPOWER SYSTEMS LP	CONTRACOSTA	GWPOWER SYSTEMS	COAL	PETROLEUM COKE	2280	1.1%	
GWPOWER PLANT NCHLASROAD	CONTRACOSTA	GWPOWER SYSTEMS	COAL	PETROLEUM COKE	2280	1.1%	
MT. POMO GENERATION	KERN	MT POMO GENERATION CO.	COAL	NATURAL GASEOR	6364	3.2%	
RD BRAVO JASMIN	KERN	RD BRAVO JASMIN	COAL	PETROLEUM COKE	3300	1.7%	
RD BRAVO POMO	KERN	RD BRAVO POMO	COAL	COAL	3300	1.7%	
HANFORD	KINGS	HANFORD LP	COAL	PETROLEUM COKE	2940	1.5%	
INTERMOUNTAIN 1 & 2	LOS ANGELES	LOS ANGELES DEPT. OF WATER & POWER	COAL	COAL	16400	82.6%	
ARGUS COGEN PLANT	SAN BERNARDINO	ASTRUSI CO OF CALIF	COAL	COAL	5500	2.8%	
TXR RIVERSIDE CEMENT POWERHOUSE	SAN BERNARDINO	TXR RIVERSIDE CEMENT	COAL	COAL	1700	0.9%	
					Total Coal	1985.04	2.94% Capabi

Biomass Planning Considerations

System Transportation Issues
 Current Access – New Access
 Cost

Standard Logging Truck/Road Design

50' foot Horizontal curve Radius
 (Chip Vans Require >70')

Vertical Curve *Rolling Dips
 *Drainage Crossings
 (Chip Vans Require FLAT roads)

Stand Composition

Market inventory is another term for stand composition.

Are the stands composed of mixed species, and if so, what species?

What is the percentage of species, by size class, stocking levels, basal area, etc.?

PLANNING SIDE (GOV)

Minimizing business risk:

How much money our business partner is asked to spend in the process of taking possession of the material we want to dispose of?

How much stumps will our partner pay?

How much money will our partner pay for brush-disposal deposits and other post-harvest treatment expenses?

How much money will we cause our partner to spend to use certain types of equipment?

How much money will our partner have to spend on an annual basis to maintain cash credits?

How much money will our partner have to spend on a monthly basis (i.e., is the partner paying a lump-sum, or pay as they go)?

How much money will our partner have to spend in harvest production time due to project layout (i.e., terrain), silvicultural prescriptions, timber-cutting contract designations, and other contractual stipulations?

How much time will we allow our partner to "play the markets" to optimize their profit margin?

Business Side:

What **products and specifications** do you want to market?

What is the **quantity of products** you want to start with?

What **quality** of products do you need?

What do you currently have for **harvesting and transportation equipment**?

I If you aren't interested in the harvesting and transporting of products to your manufacturing facility, what price would you be willing to pay somebody else to bring you the product?

I If you are willing to pay somebody to bring you the product, what form do you want the material delivered (i.e., tree length, chunks, chips, bundles, etc.)?

How large of a market do you want to eventually achieve and maintain?
