

TreeFree

Biomass Research & Development Committee
April 1, 2010

Biomass Solutions, Inc.

**The success of all
biotechnologies is
dependent upon a
sustainable feedstock**

– William McKean, Prof., University of Washington

REDUCE/REUSE/RECYCLE/RETHINK - TreeFree

OUR OBJECTIVES

Apply Executive Order 13112 and existing energy legislation

Partner with government agencies in removing unwanted Giant Reed

WHY TreeFree?

16 Yrs
R&D

- Founded 1997 to research, enhance and commercialize Giant Reed
- More world wide patents filed, issued and pending for Giant Reed technologies than any other private company as of 2009
- Strategies for Pulp, Paper, Electricity, Heat, Biofuels, Feedstock, Building Materials , Chemical Extraction and Propagation

Knowledge

- Our team's combined experience is the most comprehensive in the world regarding Giant Reed
- UW, WSU, AU
- Removal of Giant Reed for government and private enterprises

OPPORTUNITY 2010

- “The potential of cane as an industrial plant of the future is sufficiently great that some attention should be devoted now to research. . . .”

(Perdue p.409, 1958)

POLICY CONTEXT

- “Perceptions of relative benefit and harm also may change as new knowledge is acquired or as human values and management goals change.”

(ISAC White Paper 2006)

BENEFITS GREATLY EXCEED ECOLOGICAL COSTS

- This crop has the potential to provide the energy needed by all the biotechnologies we rely on to defeat global warming and our dependence on fossil energy:
 - New knowledge has been acquired
 - Values have changed
 - Already applying ISAC recommendations
 - Industry welcomes regulations
 - TreeFree will partner to remove unwanted Giant Reed

Environmental Advantages



High Yield

- Less Land
- Preserve Trees



Locations

- Non-Food
- Marginal Land
- Brackish
- Degraded Land



Benefits

- Experienced removing
- No Rotation
- Store in Field
- Proximity
- Carbon
- Phyto-remediation

INVASIVE SPECIES BALANCE TEST

Risk

Benefits



Invasive or Cultivated in California?



California
158,302 sq miles

Remaining Giant Reed
15.6 sq miles

■
Washington DC
68.3 sq. miles

■
Dulles International Airport
18.5 sq. miles

TreeFree's Protocol for Site Selection, Cultivation, and Transport

Adhere to protocol as a condition of planting

Planting a safe distance from flood land and riparian zones

Safe transport to prevent dispersal along roadways

Crop hygiene

Worker education

CONCLUSIONS

Invasive

- Sterile – no seeds or pollen
- Only 1 risk area

Remove

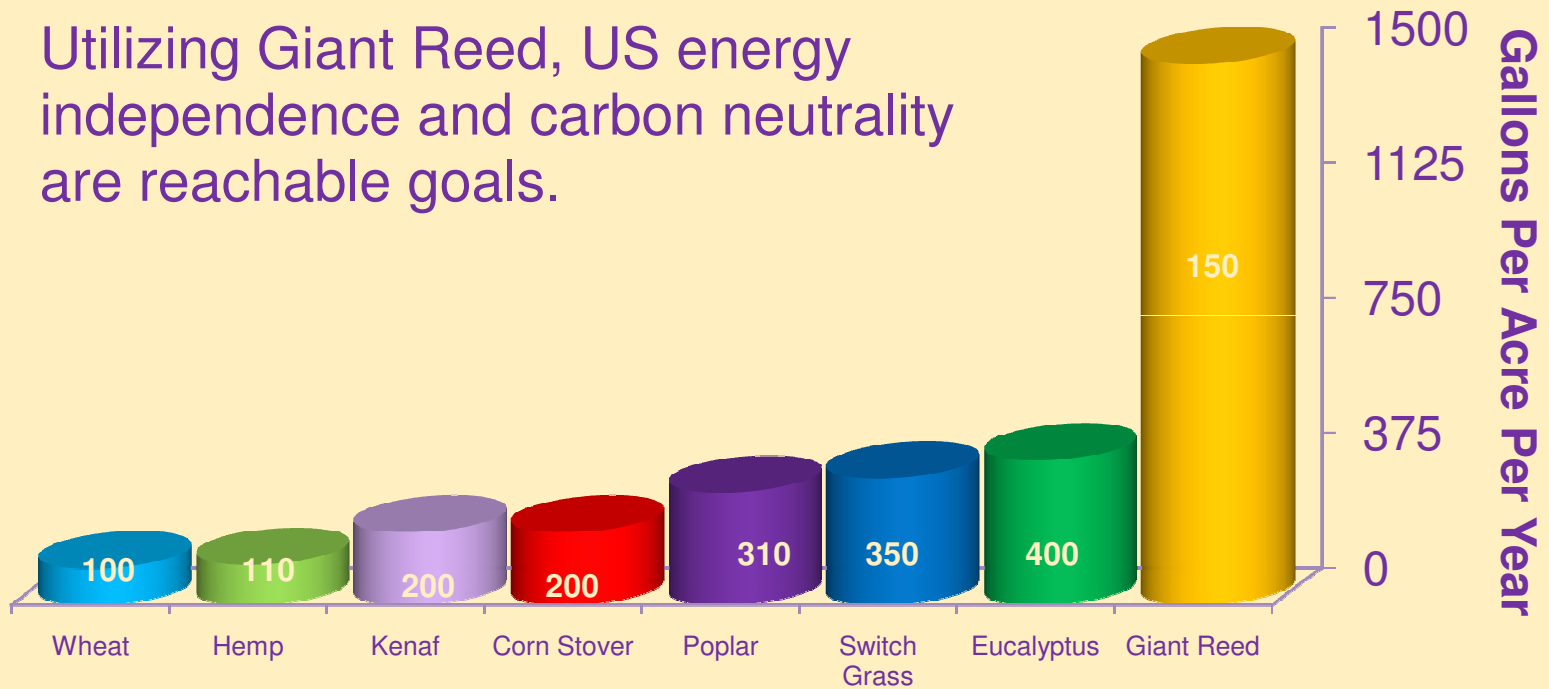
- Partner to remove unwanted
- Economically feasible

Champion

- Champion of biomass crops
- US can regain ground

Potential
ETHANOL YIELDS
Gallons Per Acre Per Year

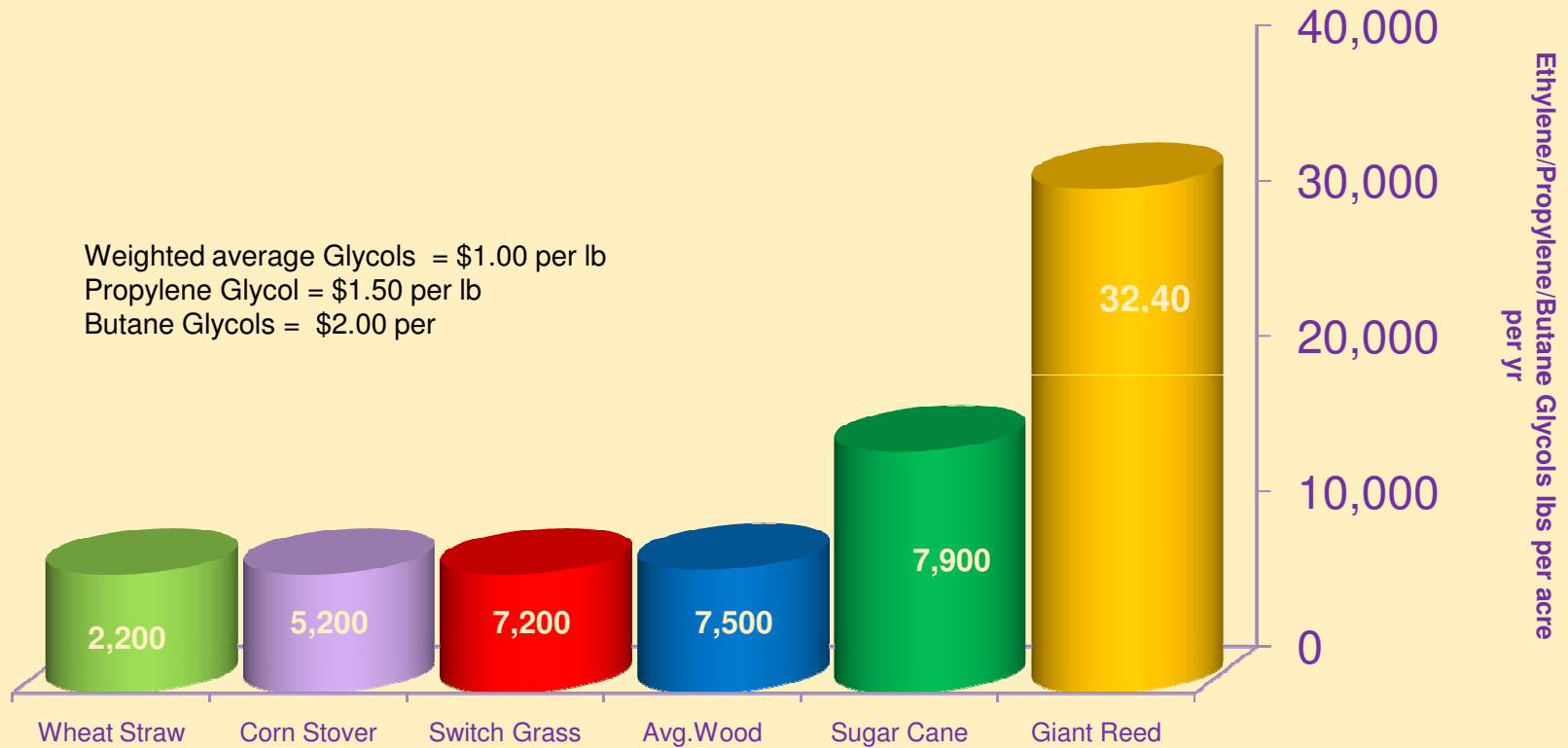
Utilizing Giant Reed, US energy independence and carbon neutrality are reachable goals.



University of Washington College of Forest Resources 2008

Potential GLYCOL YIELDS

Ibs Per Acre Per Year



University of Washington College of
Forest Resources 2008

SUGGESTED ACTIONS

Development And
Implementation Of
Risk Mitigation
Regulations And
Procedures

Design
Partnership For
Removal Of
Unwanted Giant
Reed

Industry,
Government And
Academia Work
Together On
Research