Biomass Power Association

PRESENTATION TO
SENATE INFRASTRUCTURE
WORKING GROUP

March 30, 2015

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How Biomass Power Works





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Non-Energy Benefits of Biomass

- Rural jobs
- Rural and small town taxes
- Forest maintenance and forest fire risk reduction
- U.S. Forest Service firefighting budget has more than doubled in 20 years. In 2014, firefighting (not counting preventive measures) accounted for 40% of entire USFS budget. Biomass provides a low-cost way to manage federal lands.

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Consequences of Biomass Plant Closings in CA

But now that the whole biomass industry in California is threatened with extinction, the issue has become a hot topic in the ag industry.

Growers are asking: If you can't burn orchard trees that have been removed, and you've got no biomass plant to send them to, where does it all go?

"They just pile up," said Dino Giacomazzi, Kings County Farm Bureau president. "Currently, **biomass plants are about the only way we have to dispose of orchard removal**."

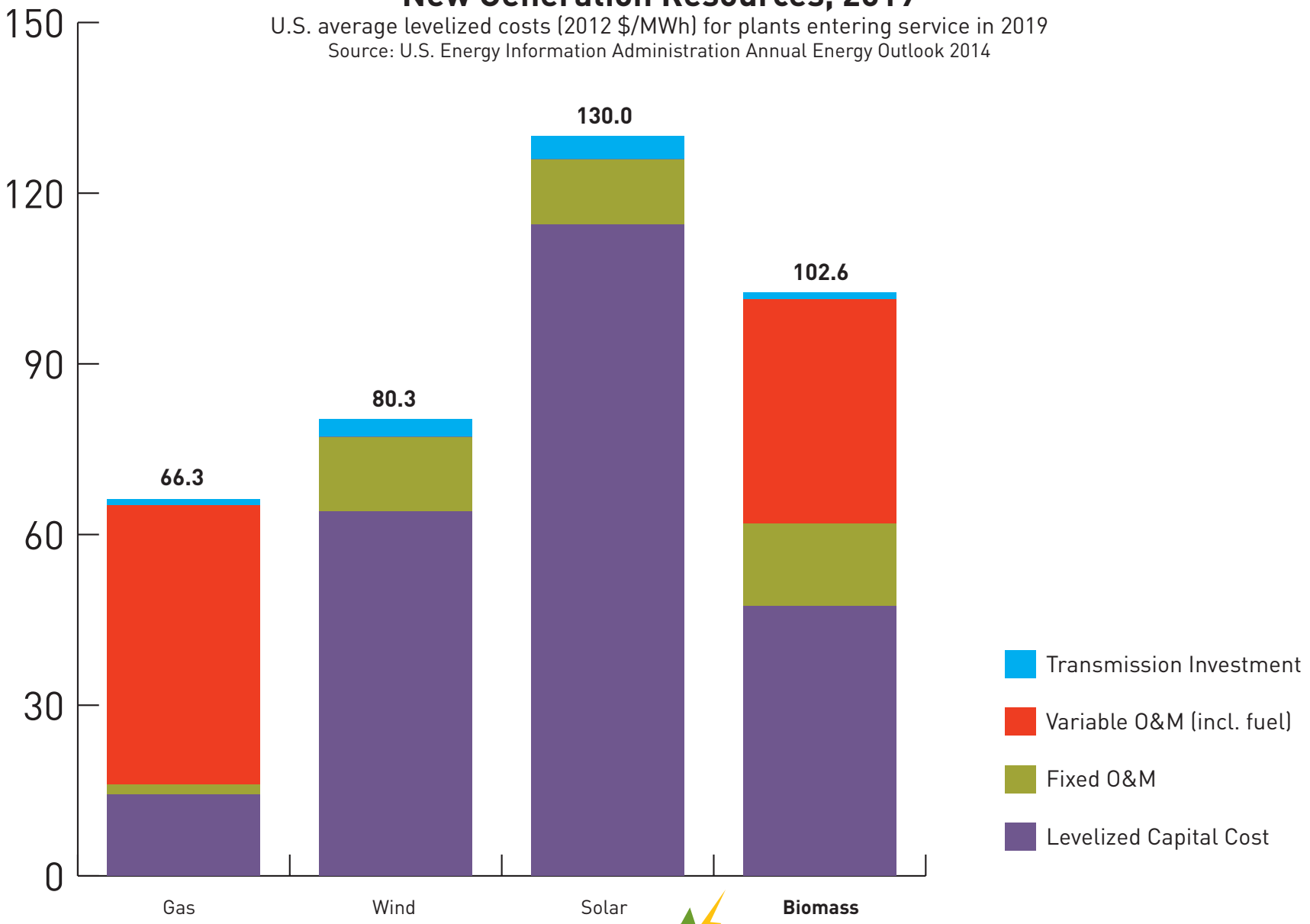
- *Hanford Sentinel (California), "Decline of Valley Biomass Plants a Threat to Ag," March 26, 2015*

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Estimated Levelized Cost of Electricity (LCOE) for New Generation Resources, 2019

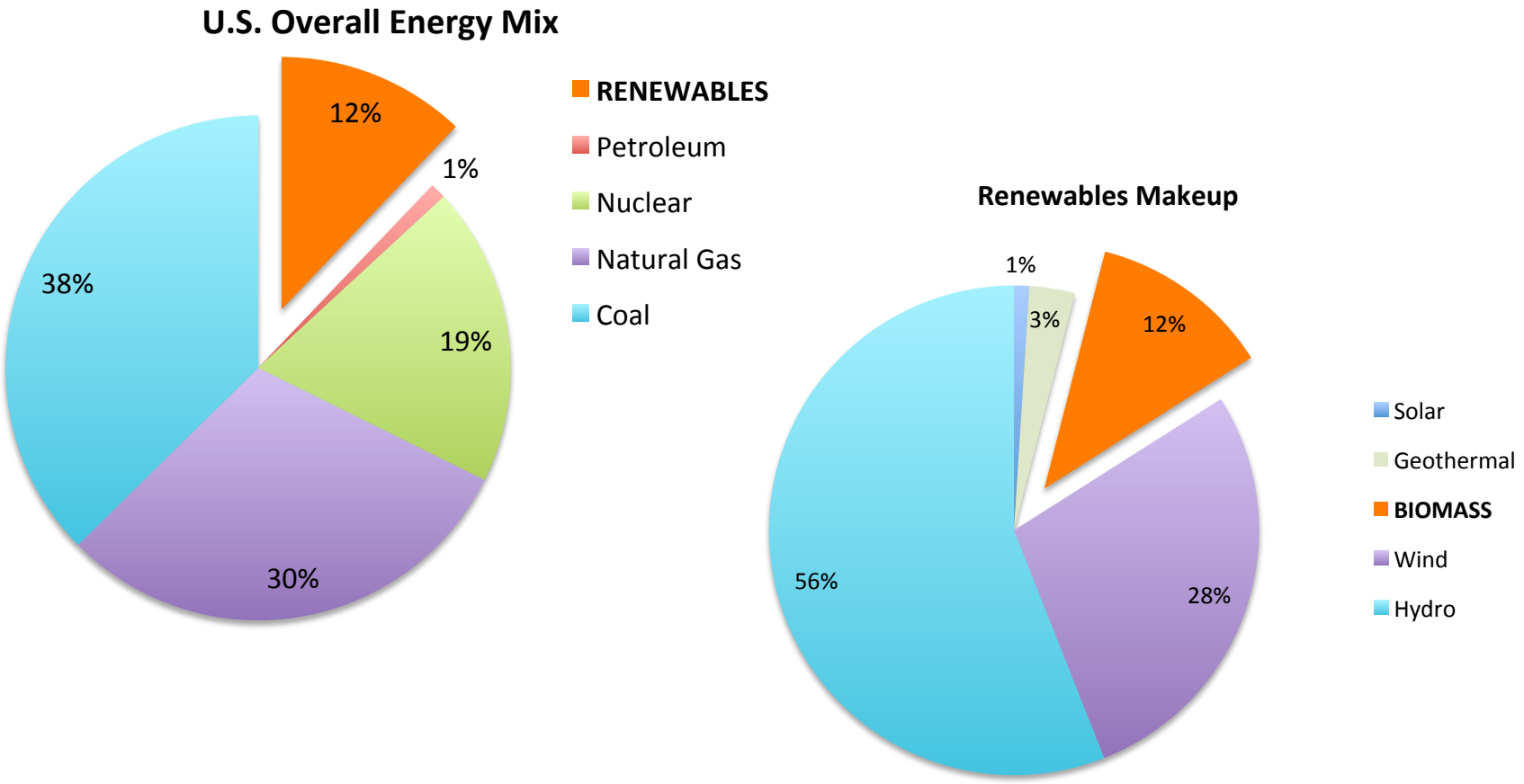
U.S. average levelized costs (2012 $/MWh) for plants entering service in 2019

Source: U.S. Energy Information Administration Annual Energy Outlook 2014



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U.S. Energy Mix, 2012 (*Source: EIA*)



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Biomass Potential

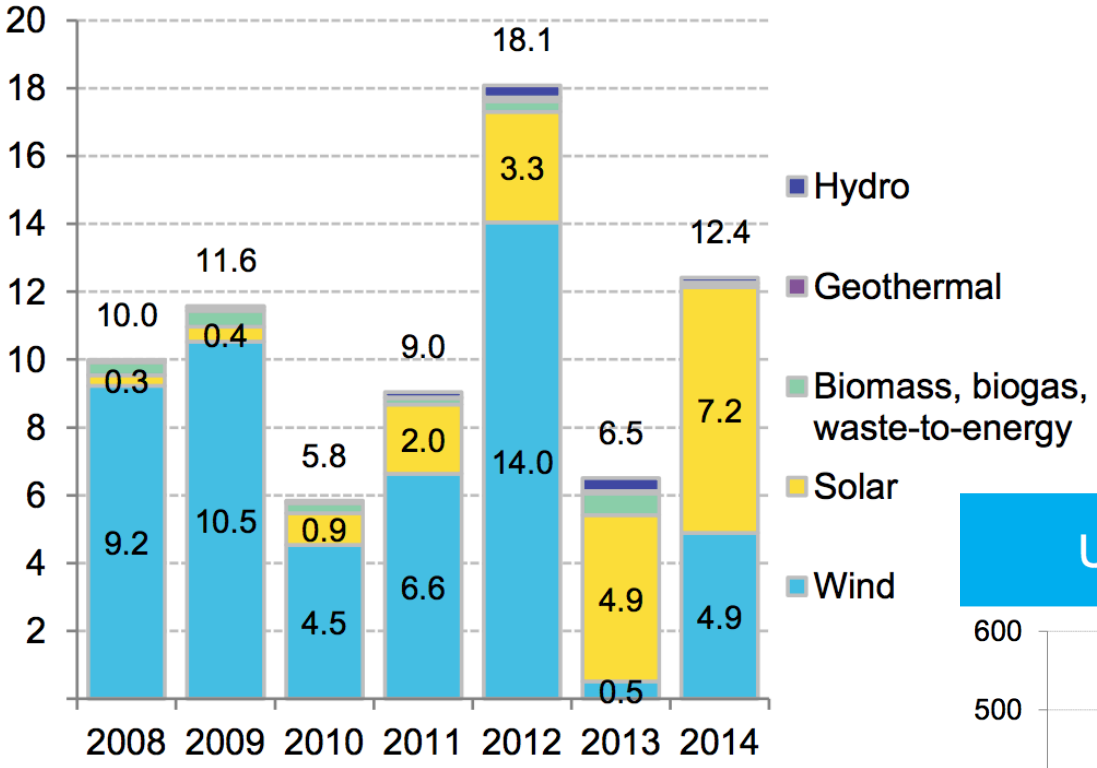
"Tree tops and limbs collected during logging operations could provide just under 20 million dry tons of additional biomass for energy production."

- Union of Concerned Scientists, 2012

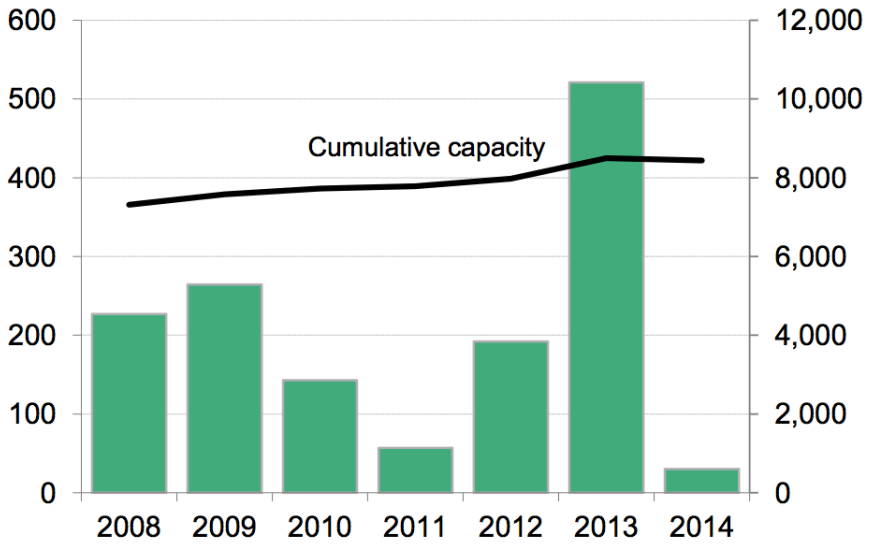
20 million tons is enough for an additional 3% of U.S. 2010 electricity demand.

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Renewable Capacity Build by Technology (GW)



US biomass-to-power build (MW)



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History of the Biomass PTC

1992: Energy Policy Act of 1992—PTC for wind, "closed-loop" biomass

2004: Working families Tax Relief Act of 2004, the so-called JOBS Act (PTC extended for open-loop biomass, among other technologies. 50% of the rate compared to wind/ 5-year support for existing biomass/5-year term for new.)

2005: Energy Policy Act of 2005 (new biomass is extended for 10 years)

2009: ARRA/1603 Treasury Grant program in lieu of ITC

2010-14: Incremental tax extenders favoring technologies with short project lead times.

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Why Some Technologies Flourish While Others Don't

- Existing law is an unlevel playing field.
  - Start/stop nature of "extenders" means that only quickly deployable projects (short permitting and construction cycles) are supported by the Code.
  - Historically, long-term ITC available only to solar.
  - Providing a rate that places biomass at the bottom

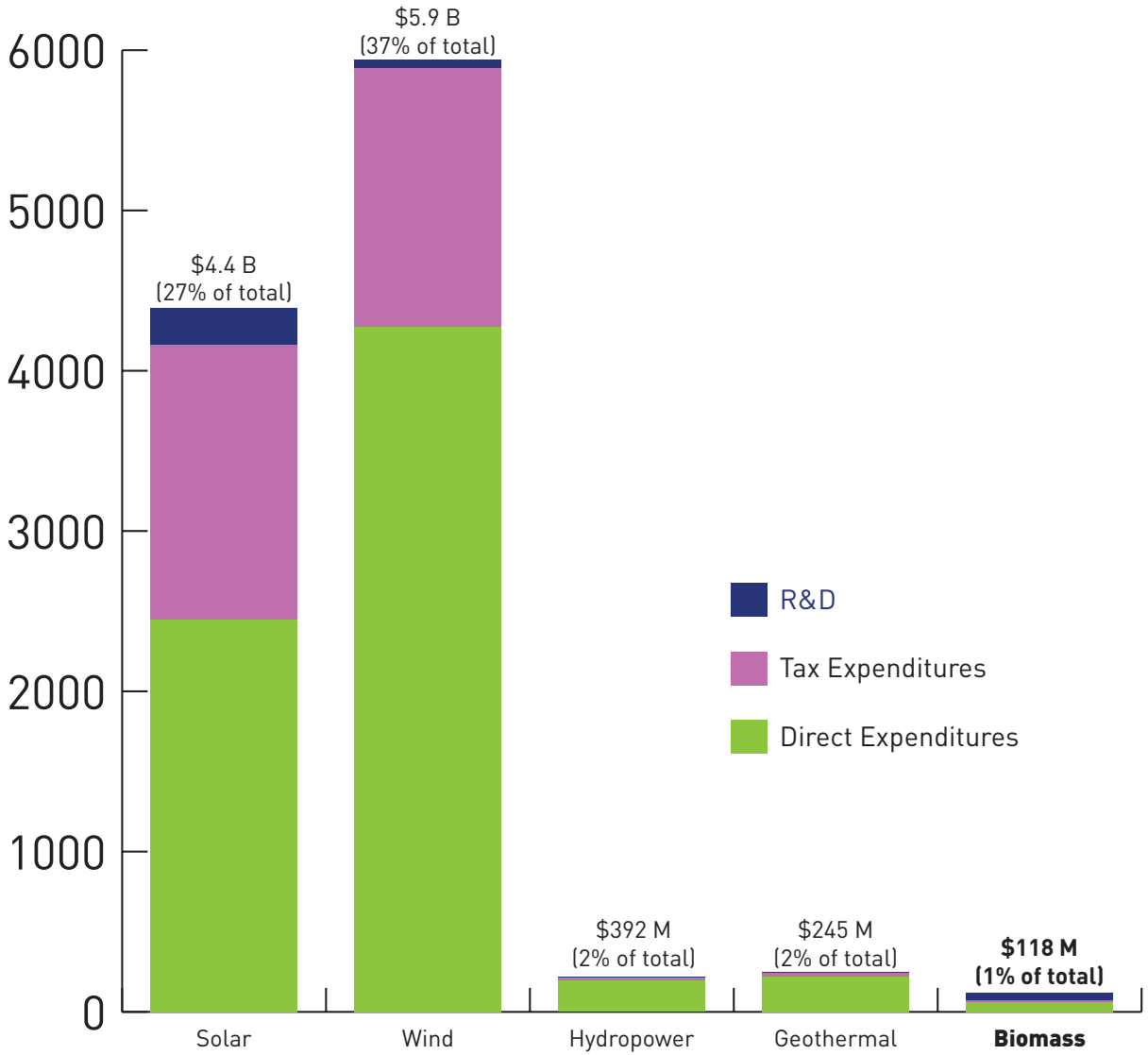
	Statutory Credit	*Credit Amount
Cellulosic Ethanol	$1.01 per gallon	$13.29
Biodiesel	$1.00 per gallon	$8.45
Wind	2.1 cents per kwh	$6.15
Geothermal	2.1 cents per kwh	$6.15
Ethanol	$0.45 per gallon	$5.92
Advanced Nuclear Power	1.8 cents per kwh	$5.28
Open Loop Biomass	1 cent per kwh	$2.93

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Fiscal Year 2013 Electricity Production Subsidies and Support

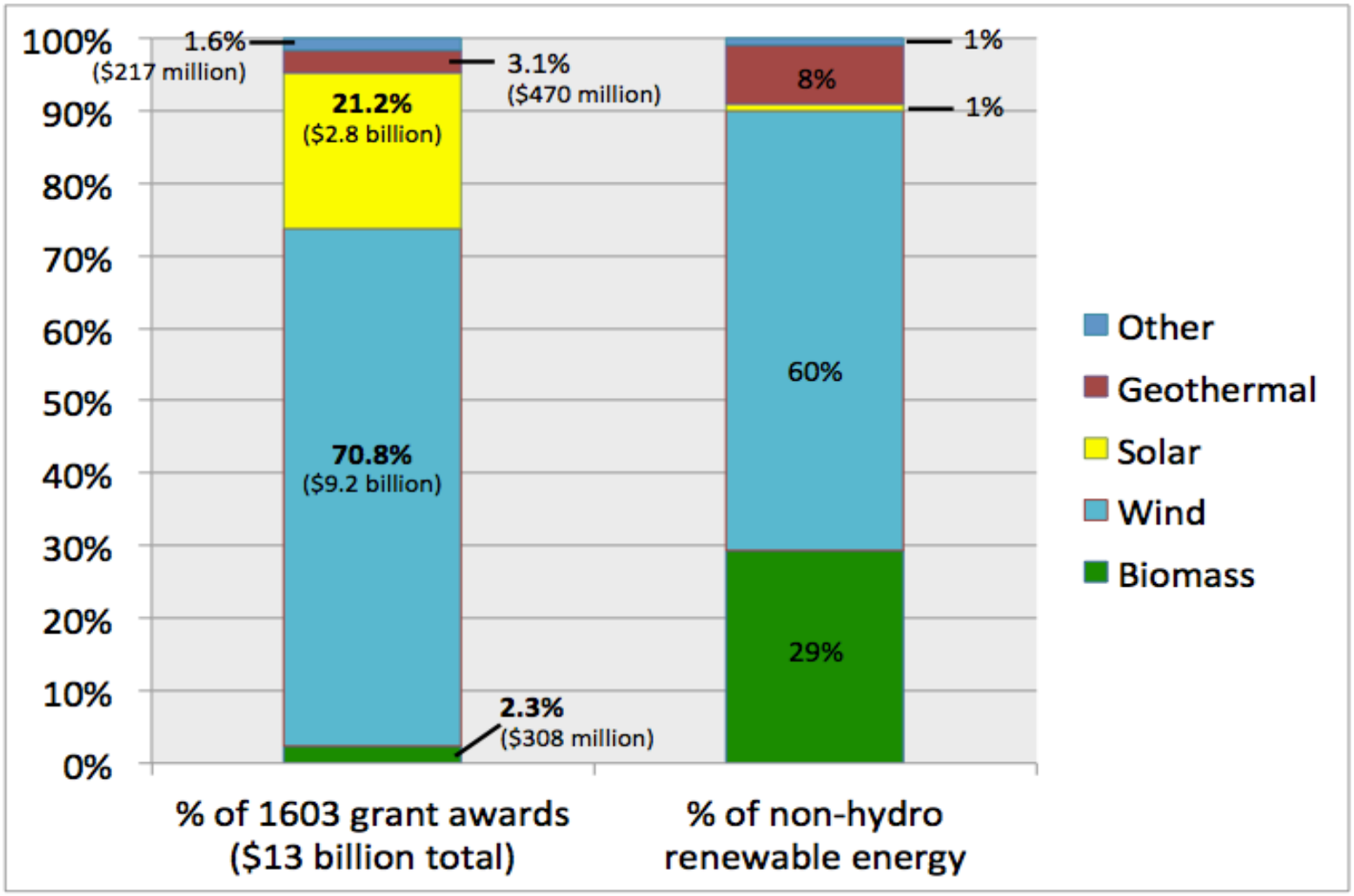
Millions, 2013 US$

Source: U.S. Energy Information Administration



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Percentages of 1603 Grant Awards Compared to Renewable Energy Contributions (as of 7/20/2012)



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Baucus Discussion Draft

- Long-term stability using carbon as a metric is commendable
- Need to avoid regulatory uncertainty i.e., EPA rulemaking on “what is carbon neutral”
- Current debate on biogenic emissions

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Summary

- Existing law creates "winners and losers" as evidenced by dramatic growth of some industries (intermittent) and stagnation of others (baseload)
- Existing law fails to accurately value baseload and ignores role in providing ancillary benefits (i.e., forest health)
- Recommendations:
  - Long-term certainty to promote growth
  - Address "crisis" of existing biomass and WTE
  - Equalize rate

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