



Supply Chains Under Construction in the U.S. South: Considerations for Sustainability

Challenges to Sustainable Supply Chains in the South - Brian Kittler, Pinchot Institute

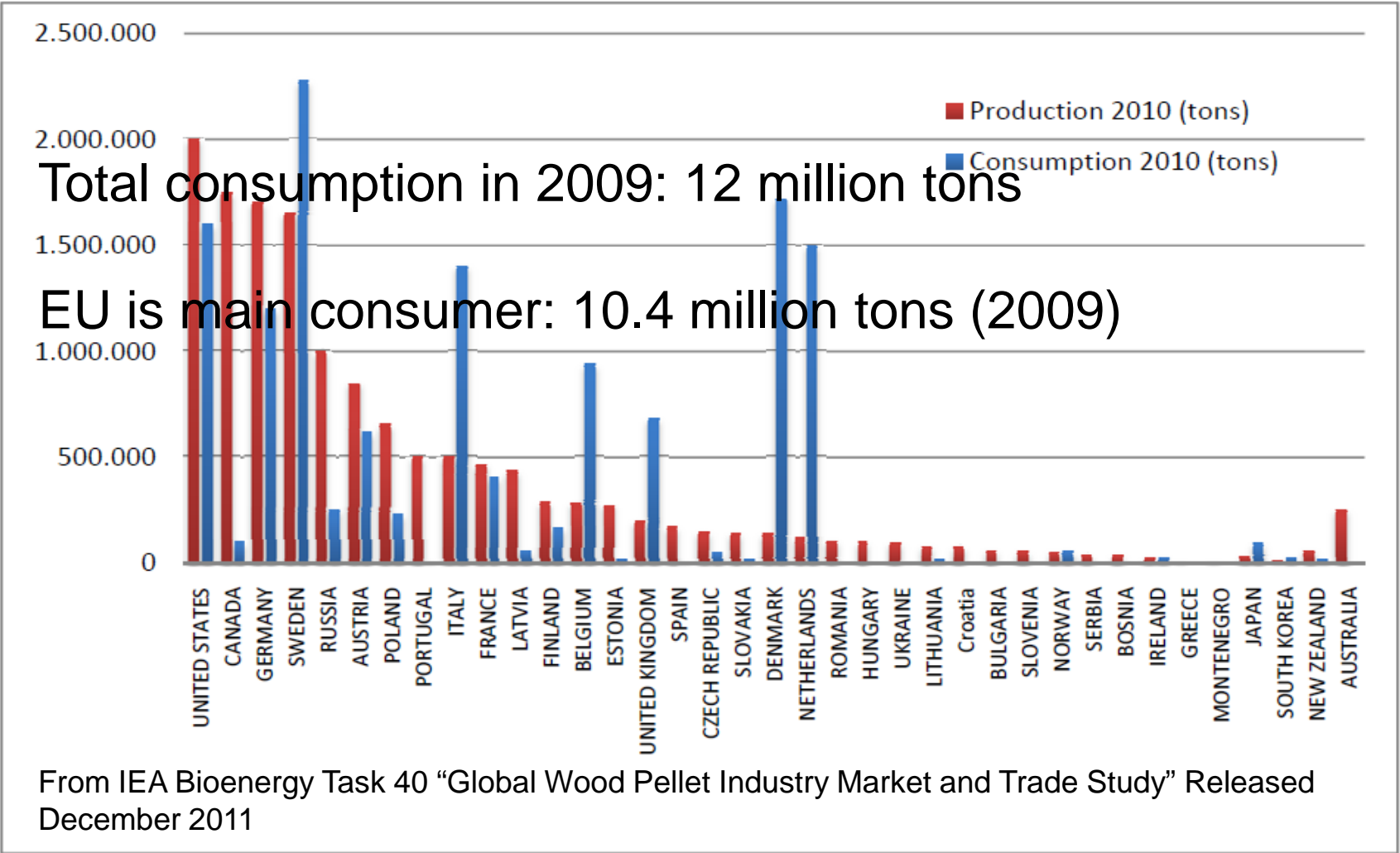
Wood Procurement in a Highly Heterogeneous Landscape - Keri Crosby, FRAM Renewable Fuels

Encouraging Landowner Adoption of Sustainability - Nathan McClure, Georgia Forestry Commission

Sustainability Criteria and Practices in the Southeast U.S. - Ben Larson, Consultant to EDF



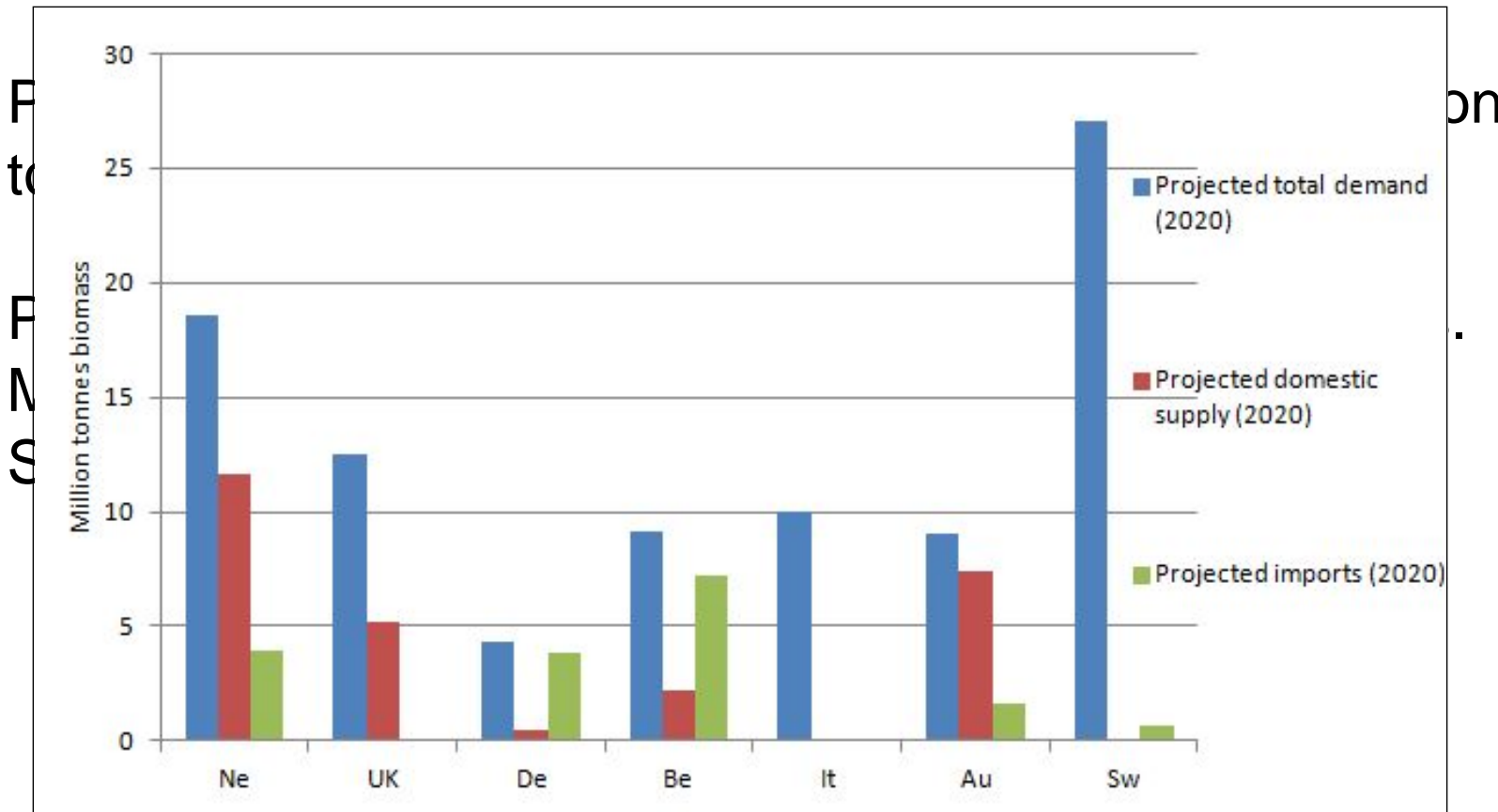
Current Supply and Demand



From IEA Bioenergy Task 40 "Global Wood Pellet Industry Market and Trade Study" Released December 2011



Projected Demand by 2020



Source: J. Joudrey, 2012; Beurskens et al. 2011; individual country NREAPs



Basic Wood Supply Chain



- (1) Transfer title of wood.
- (2) Harvest of purchased timber.
- (3) Primary processing (e.g. grinding)
for transport OR transport of
roundwood,
- (4) Transportation logistics: truck, rail,
barge, freight, etc.



750 MW Power Plant

3.75 million tons of wood pellets annually

4.7 million acres of forest (US south) if *entire growing stock* is sustainably harvested (sustained yield scenario)



- 1 ton of wood pellets = ~ 2 green tons of wood
- 100 MW = 1.2 million green tons *30 cf/ton =36 mmcf wood
- 36 mmcf ÷ 1,322 cf/acre (US South) = **27,692** acres of forest if *entire growing stock* is harvested
- 36 mmcf ÷ 57 cf/acre net annual growth (US South) =**631,579** acres *sustainably harvested*



Options for Sustainability

- Feasibility of a certification only approach?
 - Only 17% (15.9% PEFC and 1% FSC) of US south is certified.
 - Mostly large industrial and institutional landowners.
 - NIPF landowners less motivated by “price premiums” and often not interested in cooperative management schemes (i.e. group cert).





Options for Sustainability

- Best Management Practices?
 - Predominant focus on water quality
 - 87% mean implementation rate in south
 - Uneven use of practices
 - Some states with higher performance
 - Quasi regulatory to voluntary
- Voluntary Biomass Harvesting Guidelines
 - (15 – 35% retention of FWD and CWD, plus additional practices.





Examples of Programs Targeted to the Supply Chain

- Paid tax abates for performance (GreenGuide staff course)
- Chain of Custody certification for sustainable management and land protection.
- Private forestry training and certification programs industry and conservation groups.
- Forest management certification (FSC, SFI, ATF)



Figure 1. Conservation programs available to family forest owners

	Agency	Mandatory/ Discretionary	2008 Farm Bill Authorization Level for FY 2010*
Environmental Quality Incentives Program (EQIP)	NRCS	Mandatory	\$1.45 billion per year
Wildlife Habitat Incentives Program (WHIP)	NRCS	Mandatory	\$85 million per year
Conservation Stewardship Program (CSP)	NRCS	Mandatory	32 million total acres; \$805 million
Conservation Reserve Program (CRP)	FSA	Mandatory	32 million total acres
Forest Stewardship Program (FSP)	Forest Service	Discretionary	\$29.3 million in 2010
Wetlands Reserve Program (WRP)	NRCS	Mandatory	3.04 million total acres
Healthy Forest Reserve Program (HFRP)	NRCS	Mandatory	\$9.75 million annually
Emergency Forest Restoration Program (EFRP)	FSA	Discretionary	\$18 million in 2010 until expended
Biomass Crop Assistance Program (BCAP)	FSA	Mandatory	Funding necessary to implement*
Cooperative Conservation Partnership Initiative (CCPI)	NRCS	Mandatory	6 percent of eligible programs
Conservation Innovation Grants and Payments	NRCS	Mandatory	\$37.5 million annually (from EQIP)
Beginning Farmer and Rancher Development Program	NIFA	Mandatory	\$18 million per year

*Appropriations for programs may not match authorized levels because of Congressional reductions to mandatory funding levels



- Supply chain “bottle neck”?
 - Lack of public agreement on what is truly sustainable?
 - Landowner Demographics?
 - Logger/aggregator supply chain risk?
 - Questions over GHG LCA?
 - Policy uncertainty in Europe?
 - Standard harmonization for sustainable procurement (industry schemes, ISO, government, NGOs, cert programs)?
 - Mismatch between demand and supply regarding the expectations of sustainability?