

IOWA STATE UNIVERSITY

Extension and Outreach / Department of Economics

Insights for Improved Participation in the Delivery of Corn Stover to Cellulosic Ethanol Plants

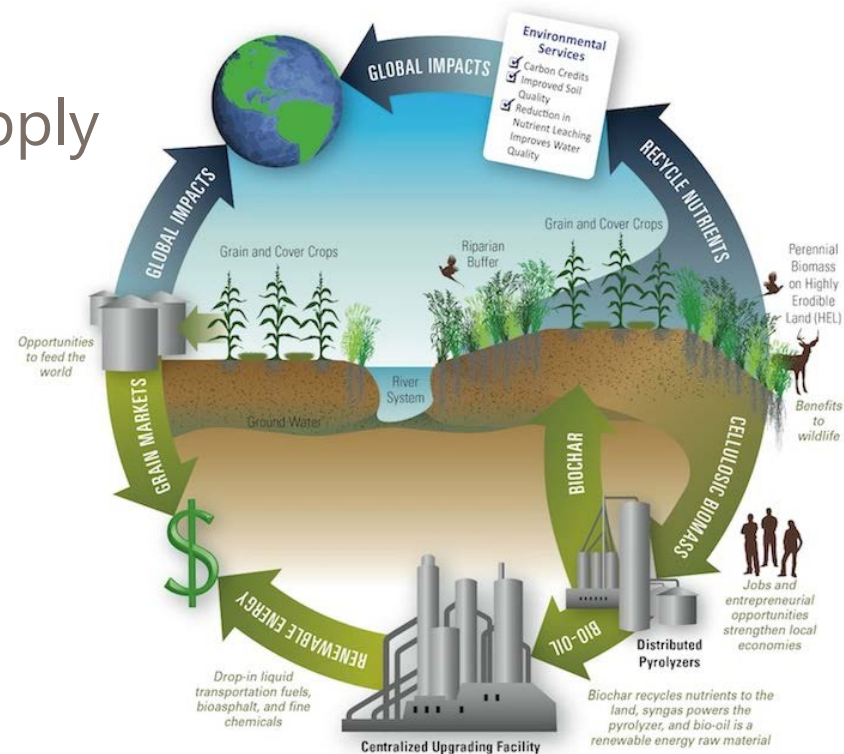
American-Made BioEnergy from Field to Refinery: Feedstock Logistics
C-FARE and USDA OCE Office of energy Policy and New Uses (OEPNU)
National Press Club, Washington, D.C.

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Background and Motivations

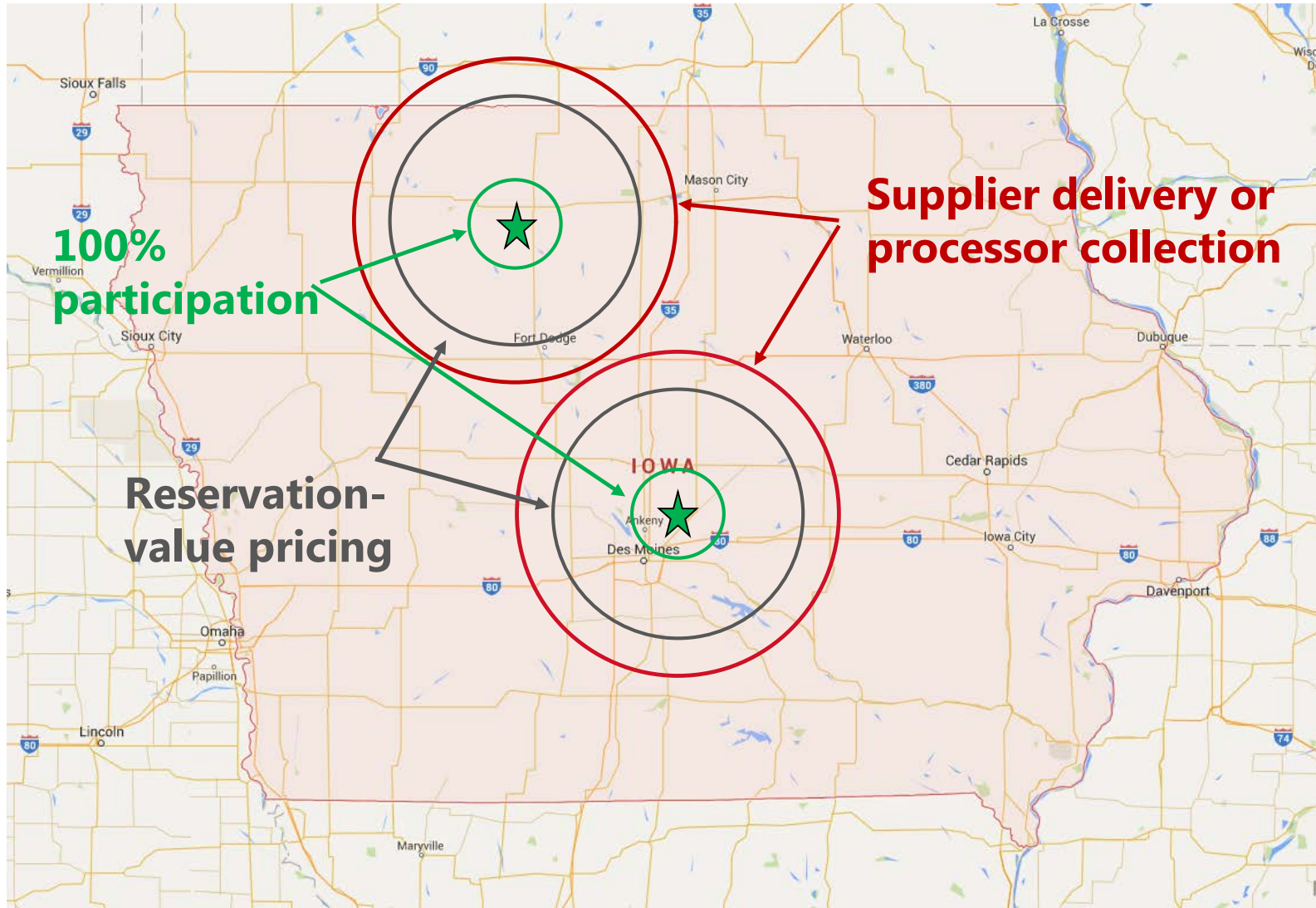
- CenUSA Bioenergy – USDA NIFA AFRI competitive grant, “Sustainable Production and Distribution of Bioenergy for the Central USA” (#2001-68005-30411)
- Availability does not equal supply



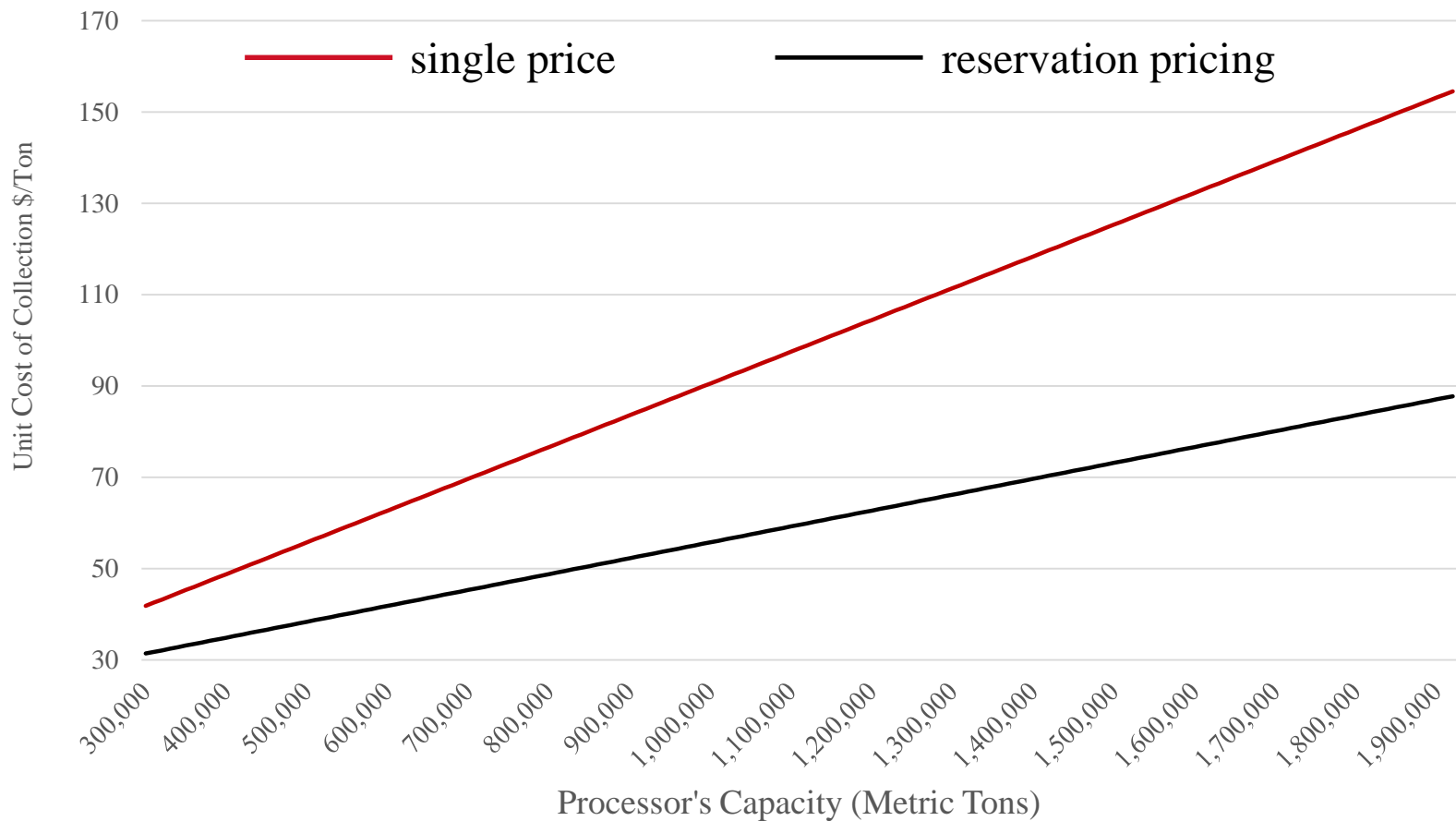
The Case of Stover

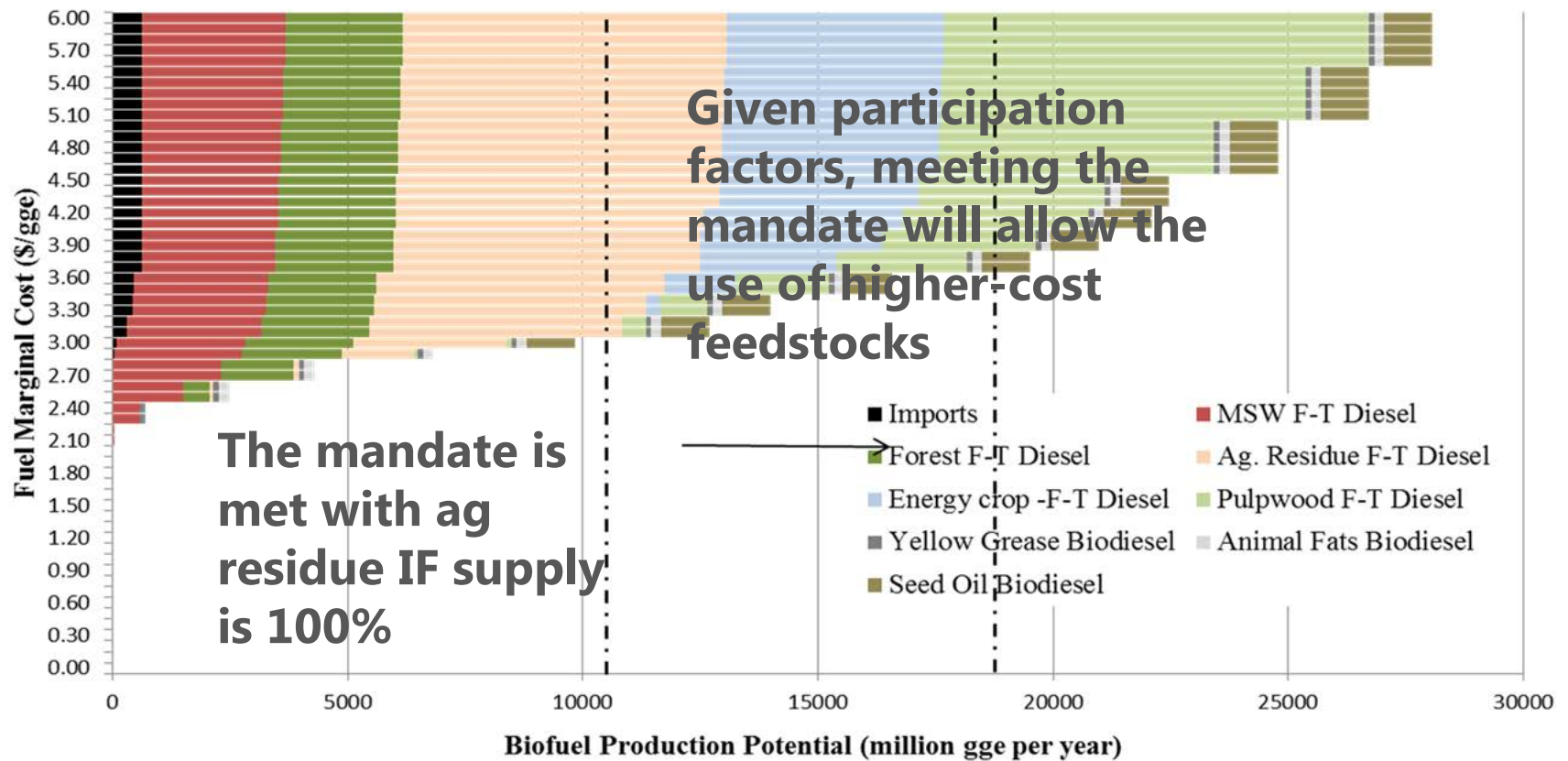
- Two collection mechanisms
 - Processor collection
 - Producer delivery
- Planned for 25-mile radius, but in some cases 50+ miles from the plant to source feedstocks
- Processors must pay producers same price for feedstock
- Participation rates significantly lower than feedstock availability suggested
- Processors are accepting a very large radius in lieu of higher prices, and this is optimal.

Simulations of collection mechanisms



Transportation makes the marginal cost curve steep





Source: Parker, Nathan. Modeling Future Biofuel Supply Chains using Spatially Explicit Infrastructure Optimization
 Institute of Transportation Studies, University of California, Davis, 2011.

A Solution

- Differentiating suppliers will enhance collection efficiencies and system welfare.
- Pricing stover on land characteristics should provide a solution to current large draw areas. Factors might include:
 - Carbon content
 - Availability of animal manure
 - Rotation
 - Operation size
- Hedonic model to estimate value or demand relative to factors

THANK YOU.

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