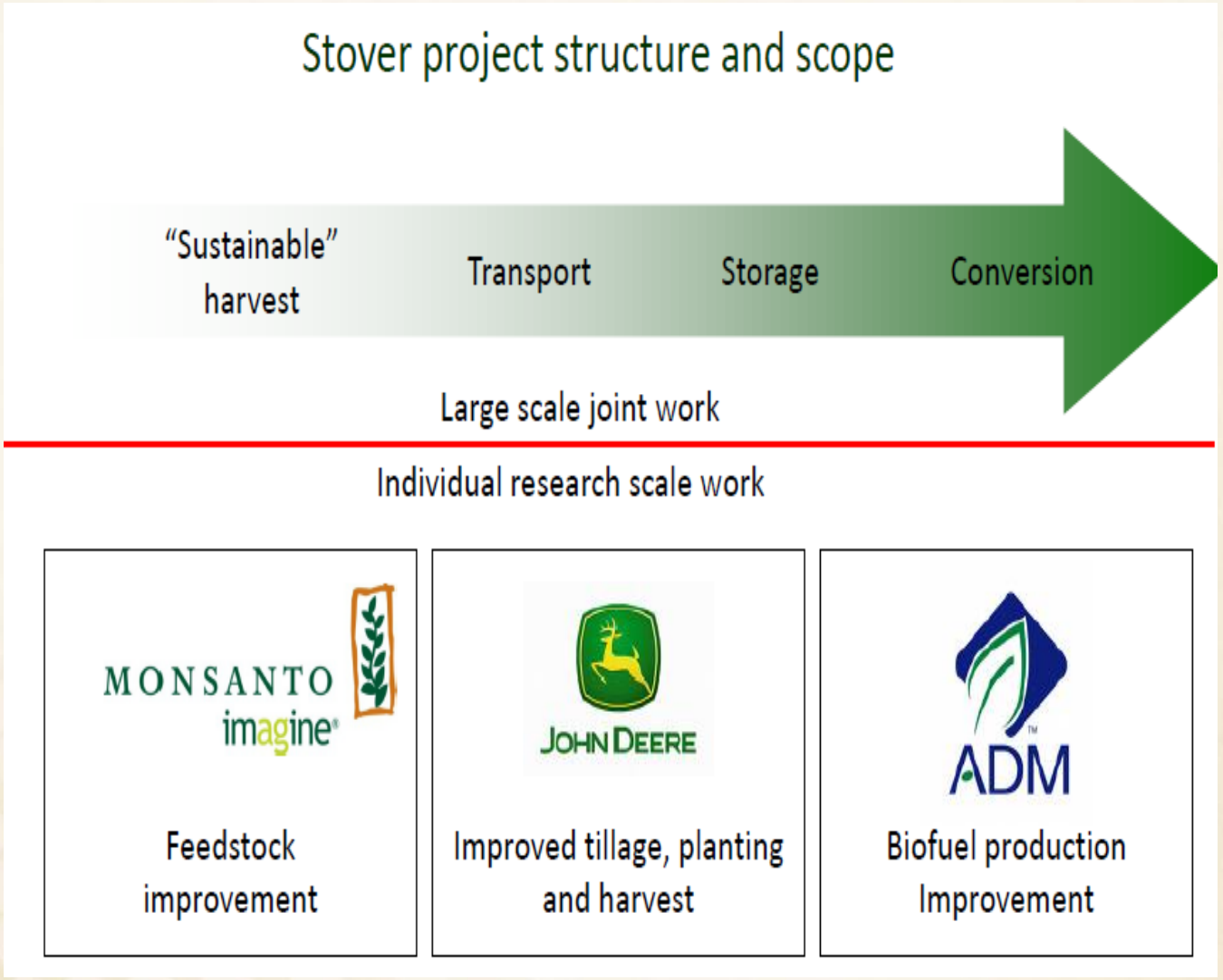
Bioenergy Feedstocks

Mark Henson

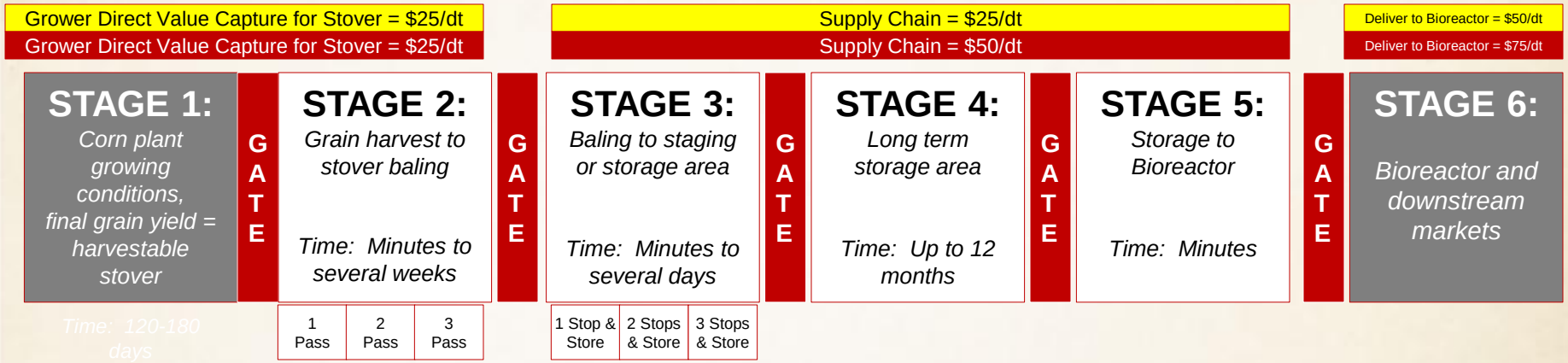
June 25, 2014

MONSANTO

The DAM Project



Corn Stover Supply Chain: Risk Mitigation Stage & Gate Process



Key Needs:

- To achieve $50/dt supply chain, real data set for supply chain model needed with material identification and predictable quantify/quality at the reactor gate
- To achieve $25/dry ton supply chain, likely need a step change innovation

Key Challenge:

- Need monitoring and/or prediction tools at millions of ton scale

DAM 2.0 Project Goal:

Demonstrate a Robust Supply Chain that Cost-Effectively Delivers Quality-Specified Corn Stover

DAM 2: Draft Objectives

1. Develop a business model that can be profitably operated at $6/bu corn and at $4/bu corn
2. Develop a supply chain strategy to deliver year round supply of quality corn stover to a bioreactor at $50/dt (short term) and $25/dt (long term)
   A. Identify and develop strategies to mitigate losses in quality
   B. Identify and develop strategies to mitigate losses in quantity
3. Identify “real-time” assessment tools to measure and predict quality and quantity of stover coming to central processing facility
4. Develop stover harvest sustainability standards
   A. To meet the needs of the grower
   B. Longer term, to enable downstream market development
   C. Stage 2: Just after grain harvest
   D. Stage 3: During stover harvest
   E. Stage 4: During stover storage
   F. Stage 5: From storage to bioreactor