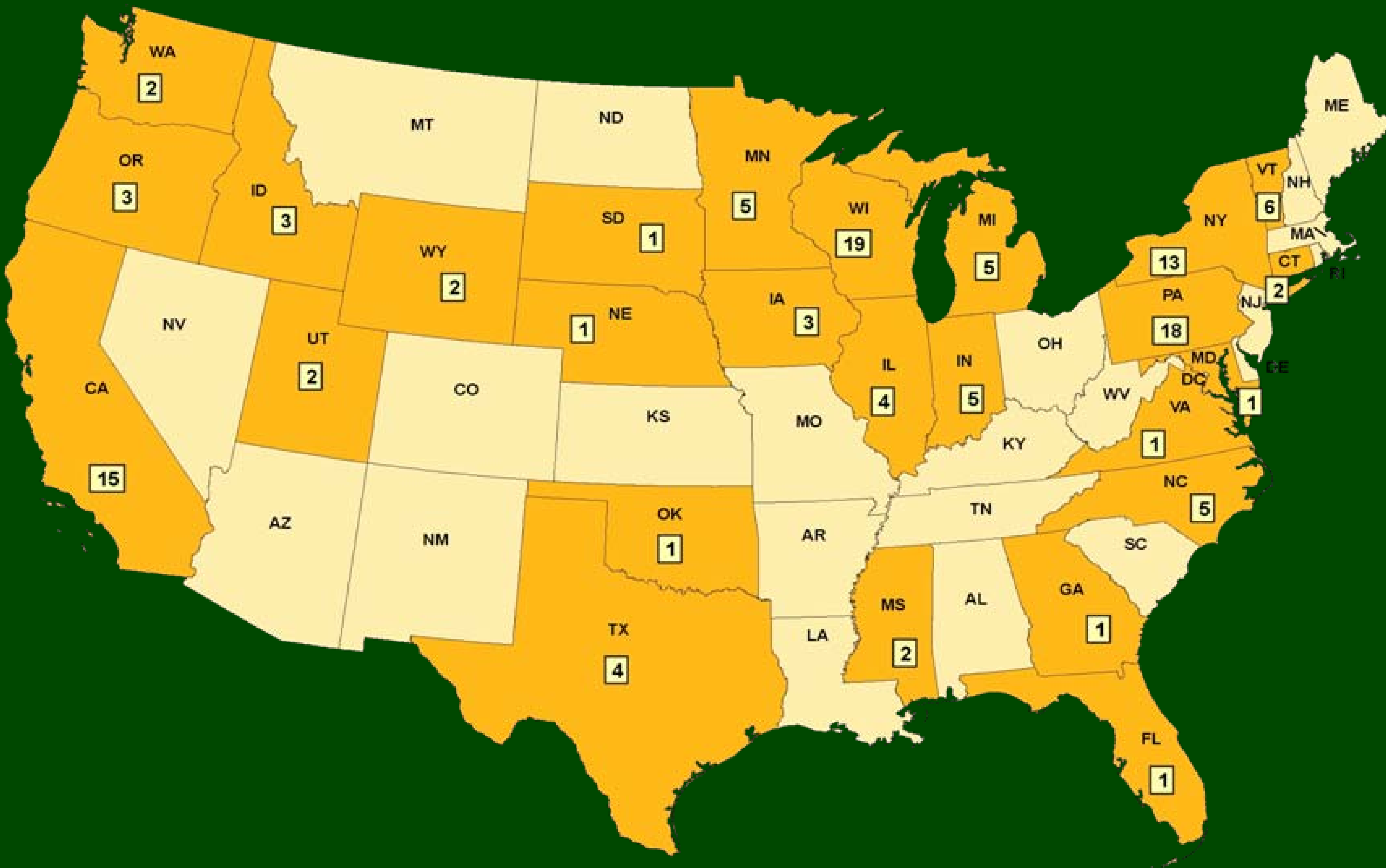
Expansion of the U.S. Digester Market in the Dairy and Pork Sector

Kurt Roos
Team Leader, Agricultural Methane Programs
AgSTAR Program
U.S. Environmental Protection Agency

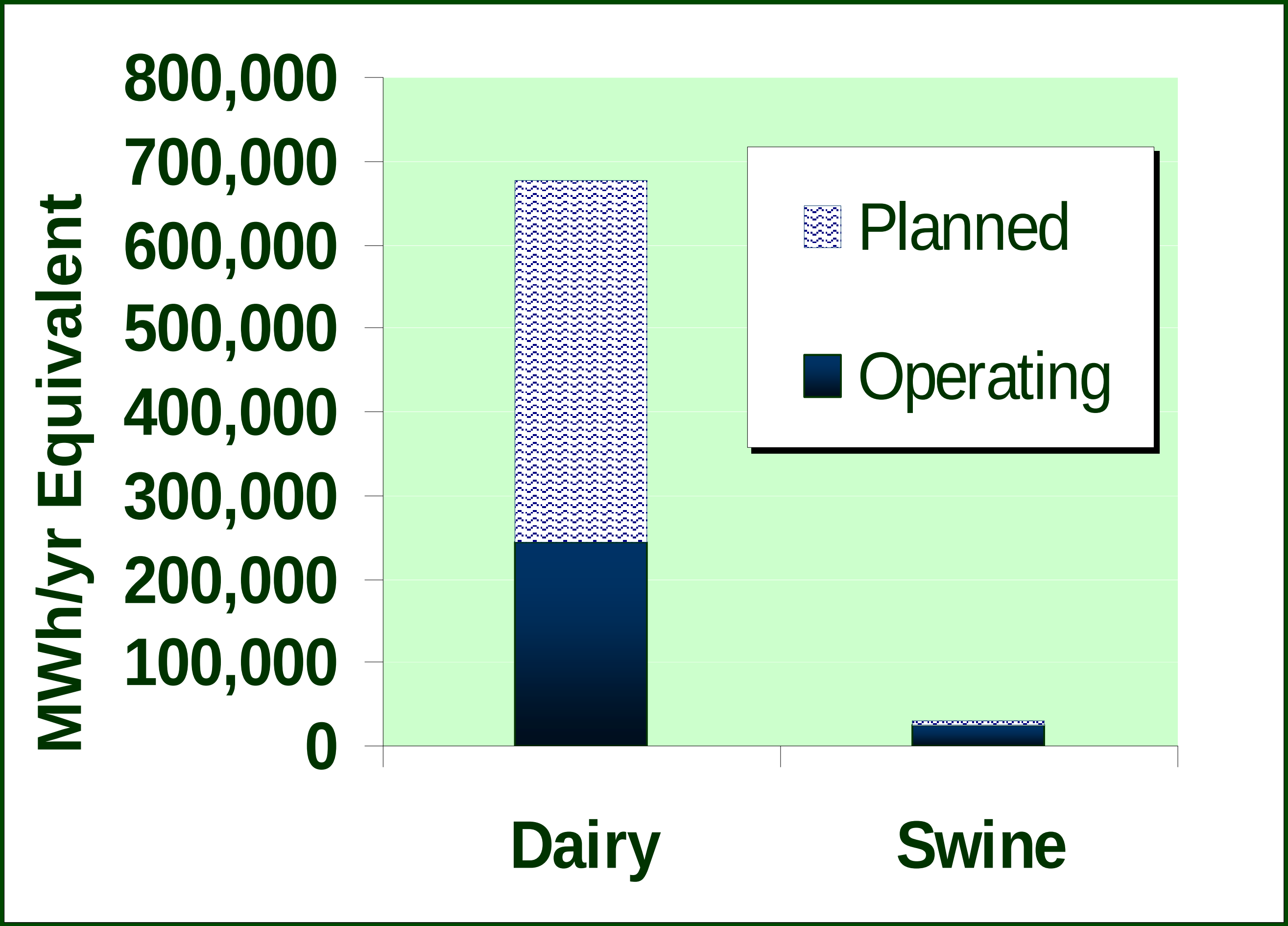
U.S. Digester Industry in Perspective

- The U.S. digester market was first awakened during the energy crisis of the 1970's
- Over a 8 year period 100, on-farm digesters were constructed with over an 80% failure rate
- By 1995, only about 10 systems were still in operation
- The AgSTAR initiative, among state programs and Farm Bill have provided a basis for a mature digester industry and financing support for the livestock industry

Today 125 Operating Manure Digesters



Current Renewable Contribution



Based on AgSTAR Database

Estimated Market Potential

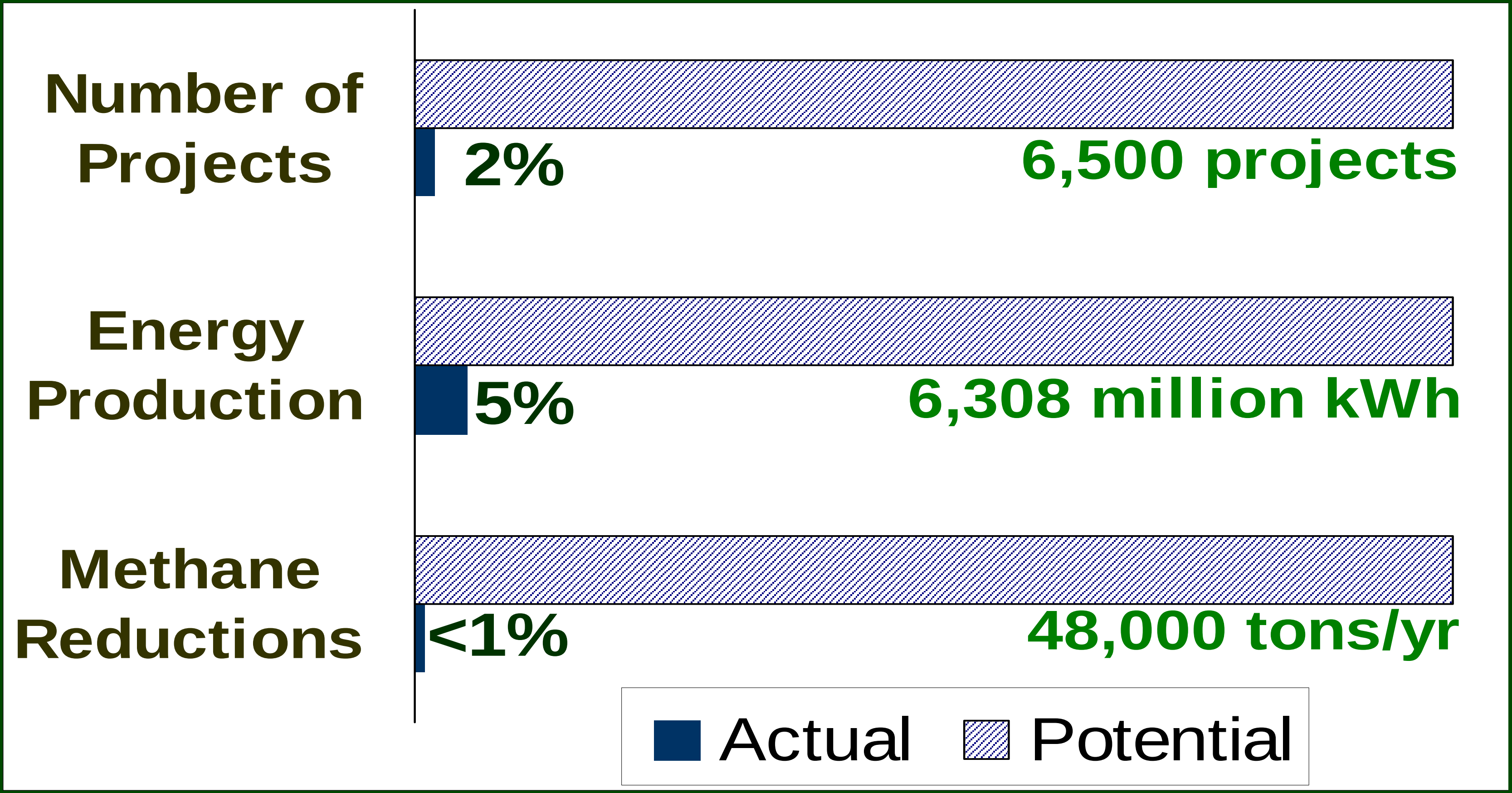
Secto r	Market Opportunity		Renewable Energy Potential		
	Farms Candidate[1]	Investmen t (Billions)	MW	MWh Output[2]	Estimated[3] Revenue/Y r
Dairy	2,500	$1.3	403	3,177,252	$2,541,802
Swine	4,000	$2.0	399	3,145,716	$2,576,573
Total	6,500	$3.3	802	6,322,968	$5,058,374

1 Upper-end estimate of candidate farms.

2 Assumes 90% load factor

3 Assumes 8 cents/kWh

2008 Actual Projects Vs. Market Potential



For Panel Discussion

- Has achieving Market potential been slow?
- Are there Market barriers?
  - Access to finance
  - Regulatory, permitting
  - Utility
  - Are they equally distributed across states
  - Can industry meet demand or has demand peaked
  - Are there equipment and service limitations
  - Is Industry waiting for something better – has it been commercially demonstrated in this sector
  - Are grants, low interest loans, and loan guarantees a key project driver
  - Are carbon markets making a difference