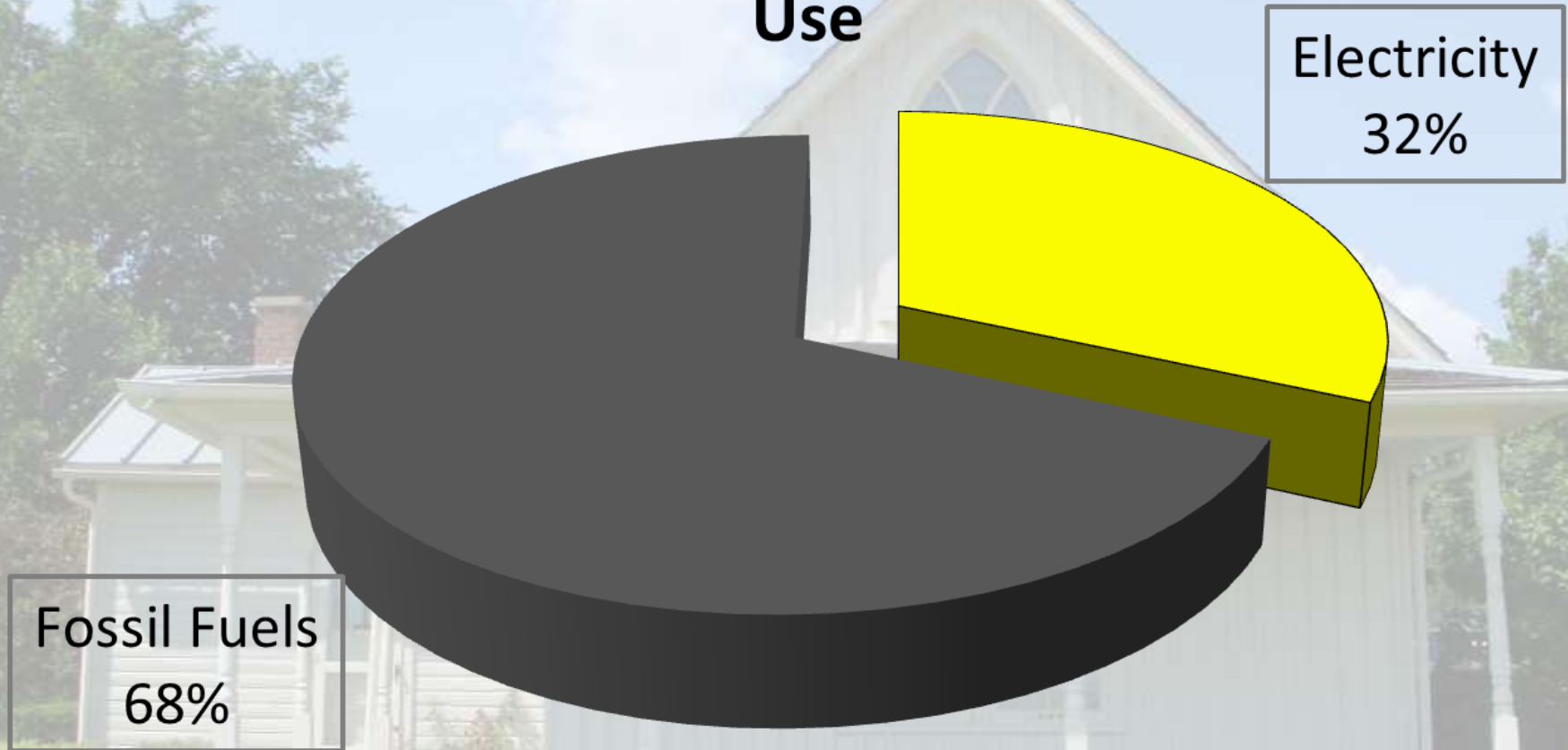


Home Grown Fuel at the University of Iowa

IDEA Annual Conference
June 29, 2015

Average Midwest Home Annual Energy Use



117 MMBtu per year

117 MMBtu per year

- How many acres of miscanthus would you need to provide energy for the average midwest home for one year?
 - Less than 1 acre
 - 10 acres
 - 100 acres
 - 1000 acres



117 MMBtu per year

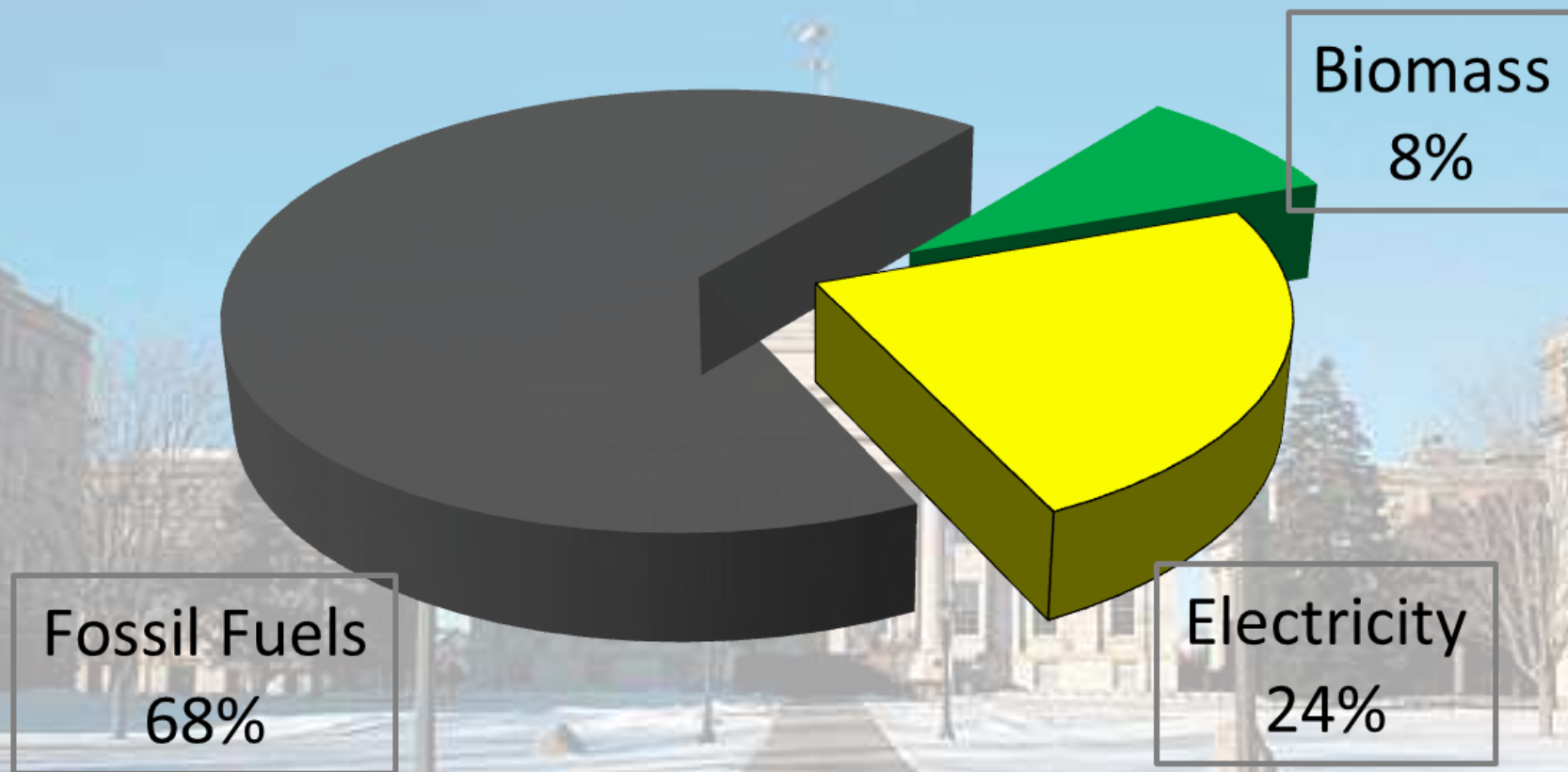
- How many acres of miscanthus would you need to provide energy for the average midwest home for one year?

—Less than 1 acre

- 10 acres
- 100 acres
- 1000 acres

—0.75 acres

UI 2010 Baseline Energy Use



4,000,000 MMBtu per year

4,000,000 MMBtu per year is:

An aerial photograph of Fenway Park during a baseball game. The field is visible with its characteristic green grass and brown dirt base paths. The stands are filled with a large crowd of spectators. Several large stadium lights are visible around the perimeter of the field. The text "Fenway Park Capacity: 37,673" is overlaid in white on the image.

Fenway Park Capacity: 37,673

The same energy use as 35,000 homes

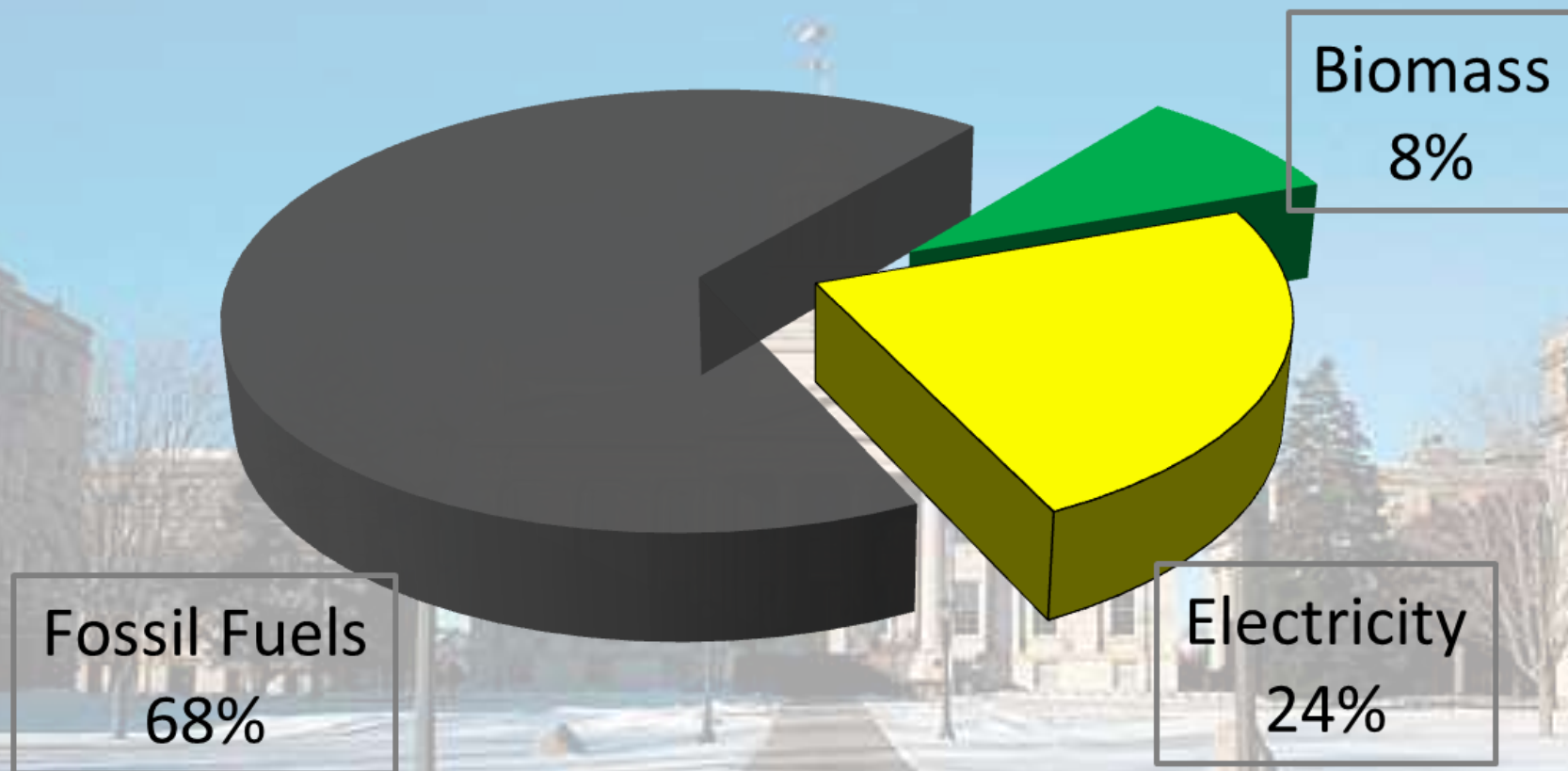
4,000,000 MMBtu per year

- What is the UI annual energy budget (fuel and electricity) for 2015-2016?
 - \$1 Million
 - \$30 Million
 - \$200 Million
 - \$3 Billion

4,000,000 MMBtu per year

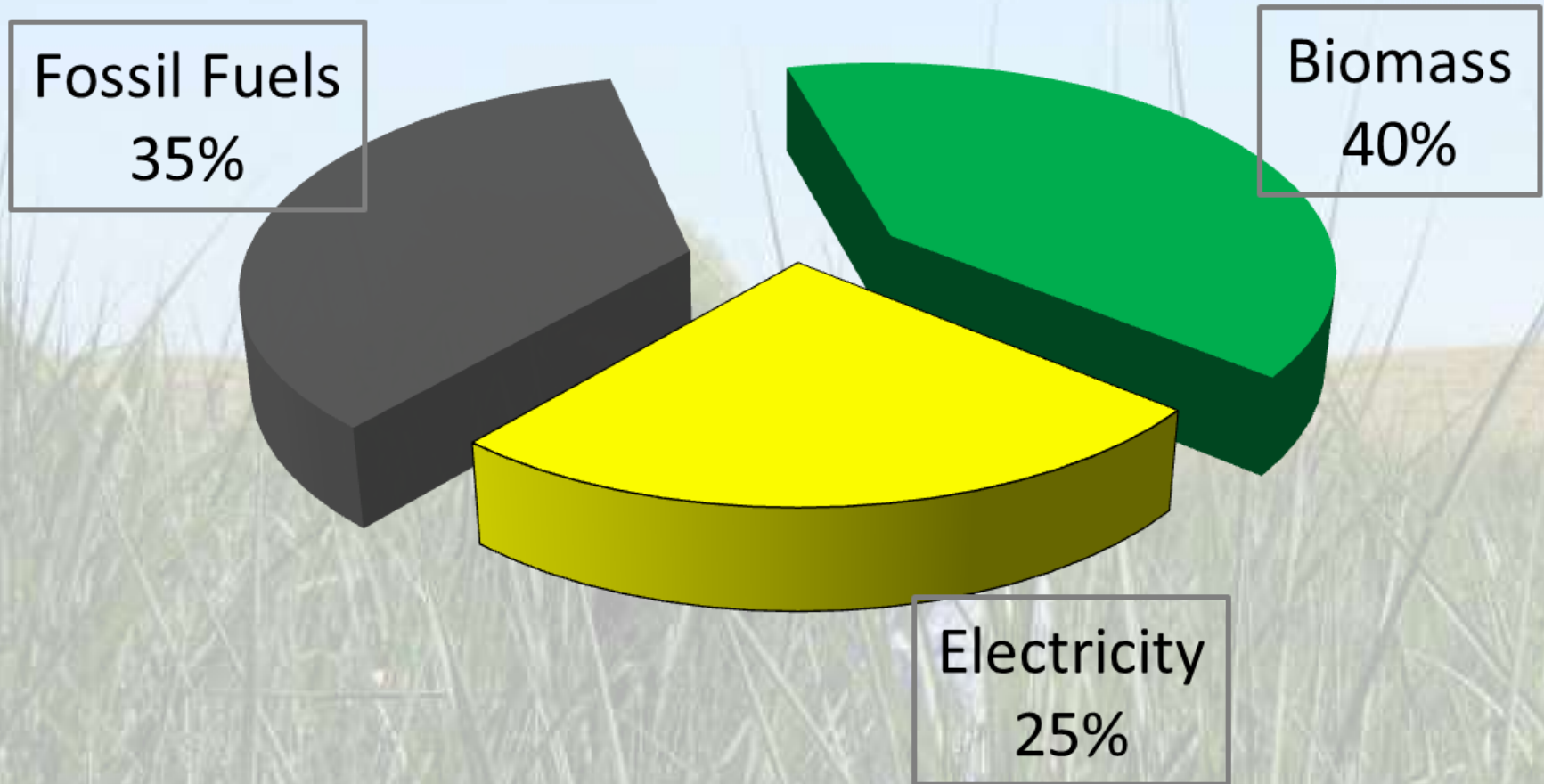
- What is the UI annual energy budget (fuel and electricity) for 2015-2016?
 - \$1 Million
 - **\$30 Million**
 - \$200 Million
 - \$3 Billion

UI 2010 Baseline Energy Use



4,000,000 MMBtu per year

UI 2020 Projected Energy Use



4,000,000 MMBtu per year

40% biomass at UI is...

Boston Garden capacity: 17,565



the same energy as 14,000 homes

Benefits of Biomass at UI



UI wood chip storage River Trading Company Muscatine, IA





Science-based Trials of Rowcrops Integrated
with Prairie Strips www.prairiestrips.org

Slide courtesy of Matt
Helmert, Iowa State
University.

Photo credit: Jose Gutierrez

100% crops



100% crops

10% prairie



90% crops : 10% prairie

100% prairie



100% prairie

(Helmert, M.J., et al., *Sediment removal by perennial filter strips in row-cropped ephemeral watersheds*. Journal of Environmental Quality, 2012. **41**(5): p. 1531-1539.)

Planting Day 2014
Dan Black Farm
13 Acres



- How often does miscanthus need to be replanted?
 - Annually
 - Every 2-3 years, depending on rainfall amounts
 - Every 20 years
 - Never



- How often does miscanthus need to be replanted?
 - Annually
 - Every 2-3 years, depending on rainfall amounts
 - **Every 20 years**
 - **Never**





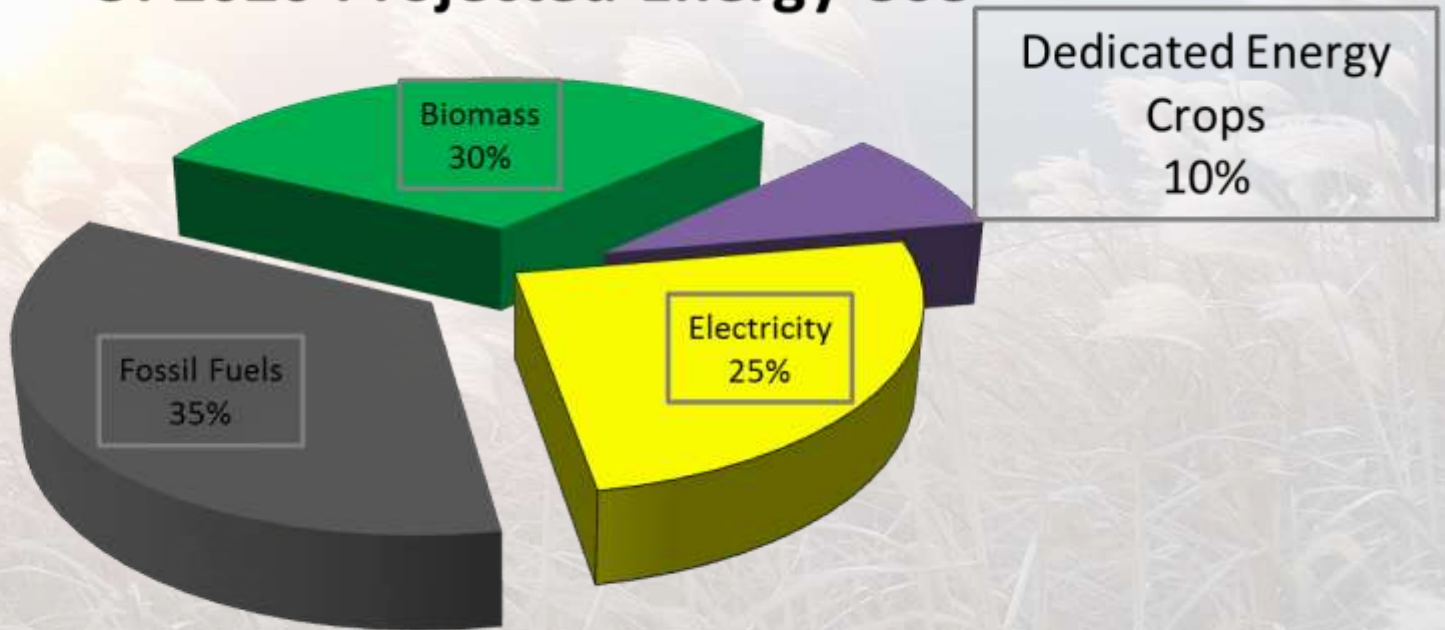
Field Day September 2015

Dan Black Farm





UI 2020 Projected Energy Use



The 400 acres planted so far is equal to the annual energy use of 475 homes...



Most conference participants homes 100% renewable



A background image of a field of tall, golden-brown grass. In the upper left corner, there is a bright sun flare that creates a warm, hazy glow across the top of the image. The grass is dense and appears to be blowing in a gentle breeze.

Thank you for your attention.

Ben Fish
University of Iowa