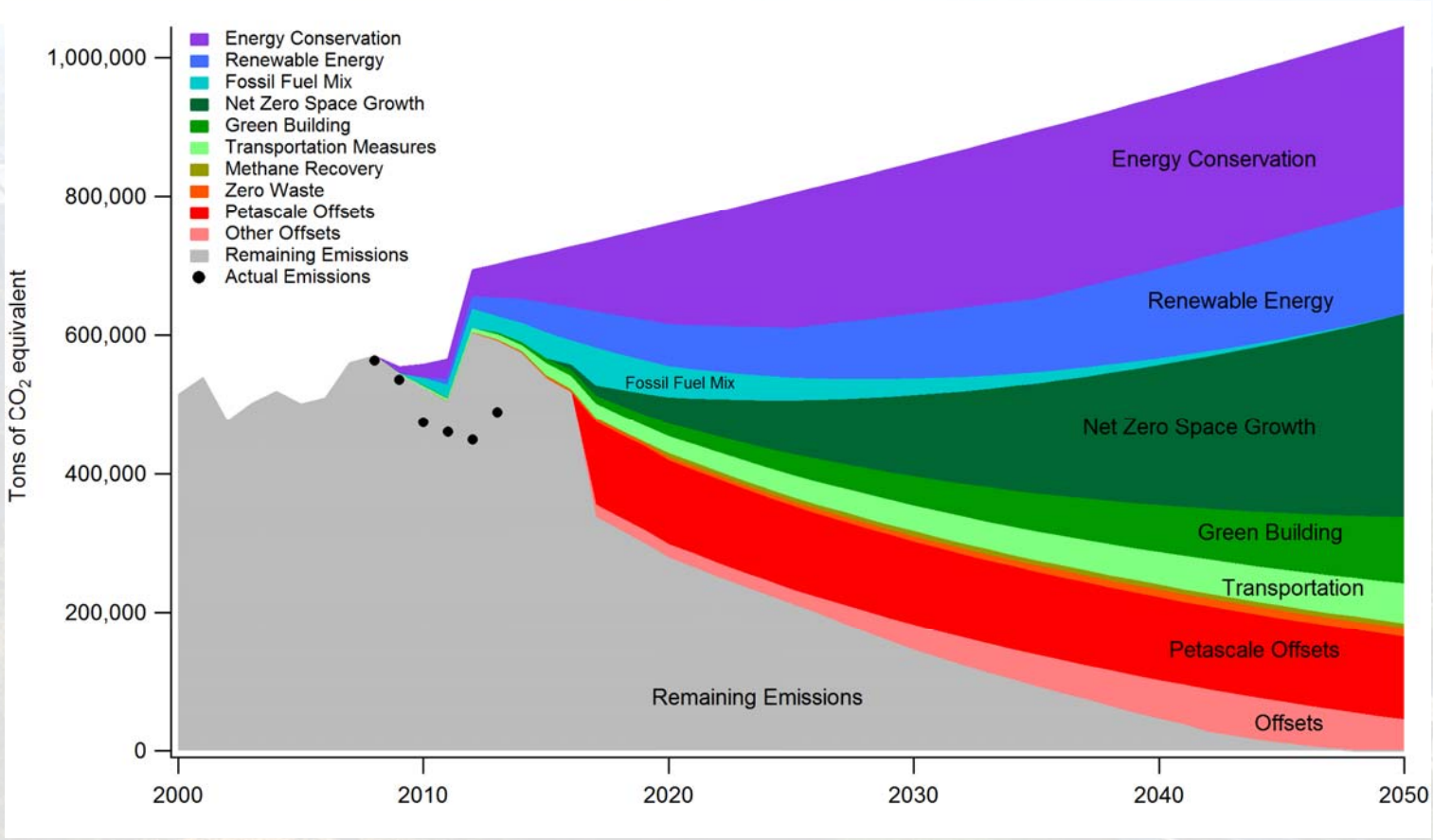
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Renewable Energy

U of I Commitment

iCAP: A Climate Action Plan



U of I Renewable Energy

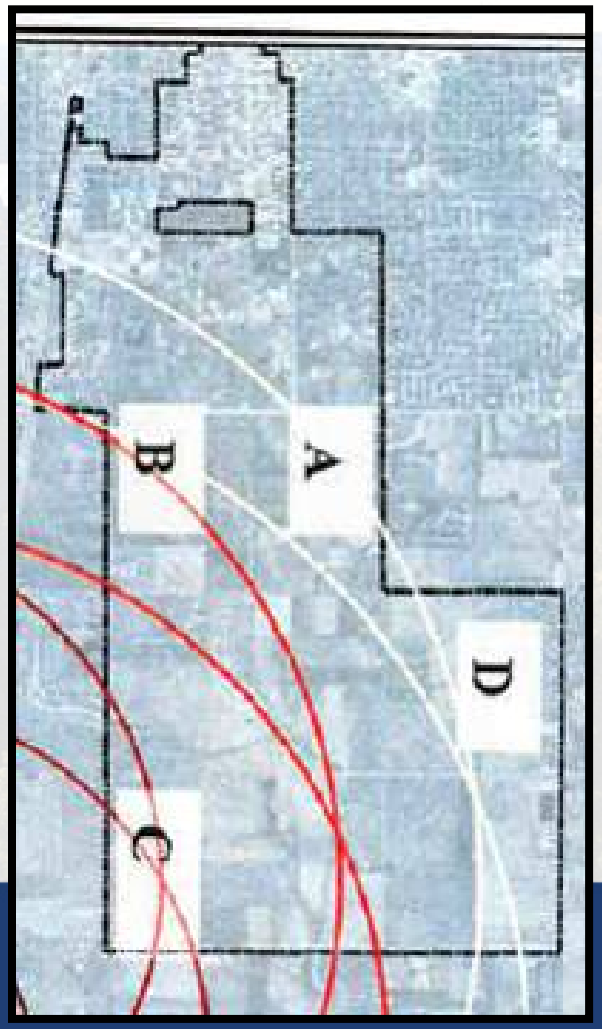
- Wind
- Solar photovoltaics
- Solar thermal
- Geothermal
- Biomass
- Renewable Energy Certificates

Wind Turbines

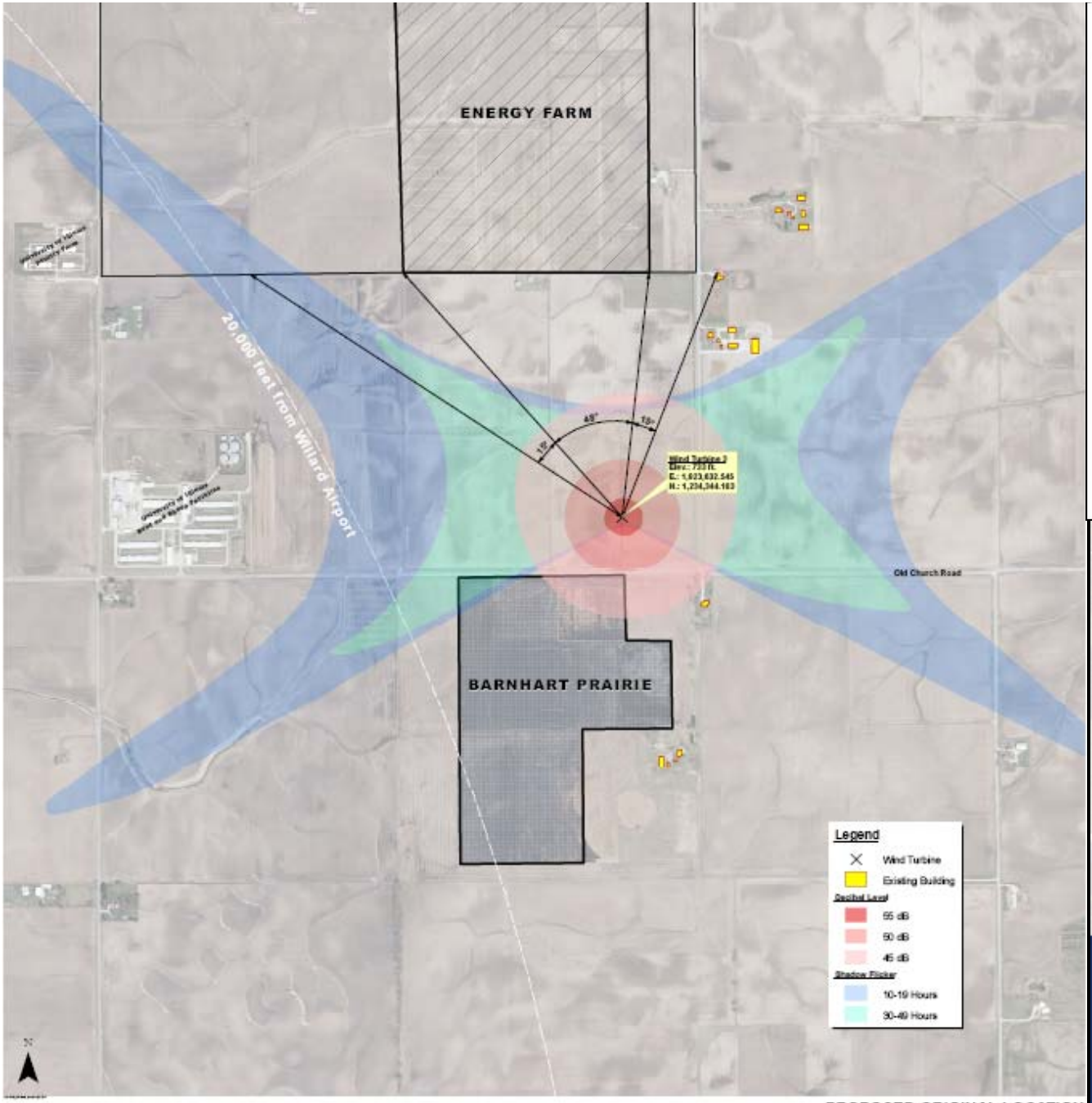
Project History

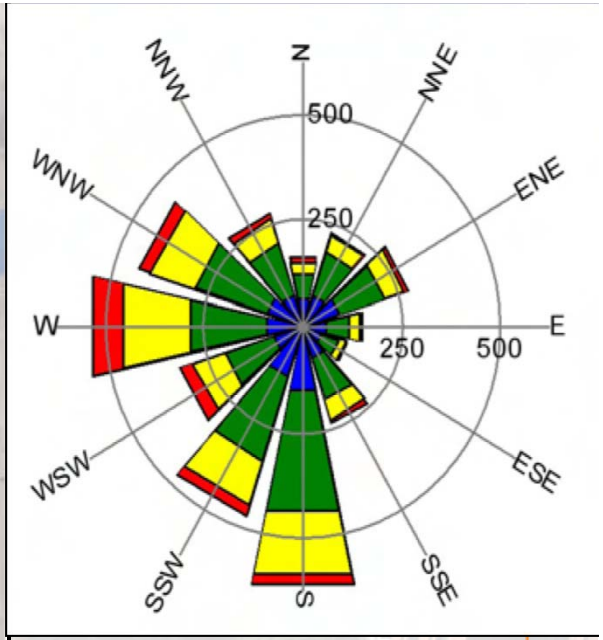
- 2003 – 2005: idea stage
- 2005 – 2007: feasibility stage
- 2007 – 2008: first attempt
- 2008: project denied by Chancellor
- 2008 – 2010: project on hold
- 2010 – 2011: second attempt
- 2011: project denied by Board of Trustees

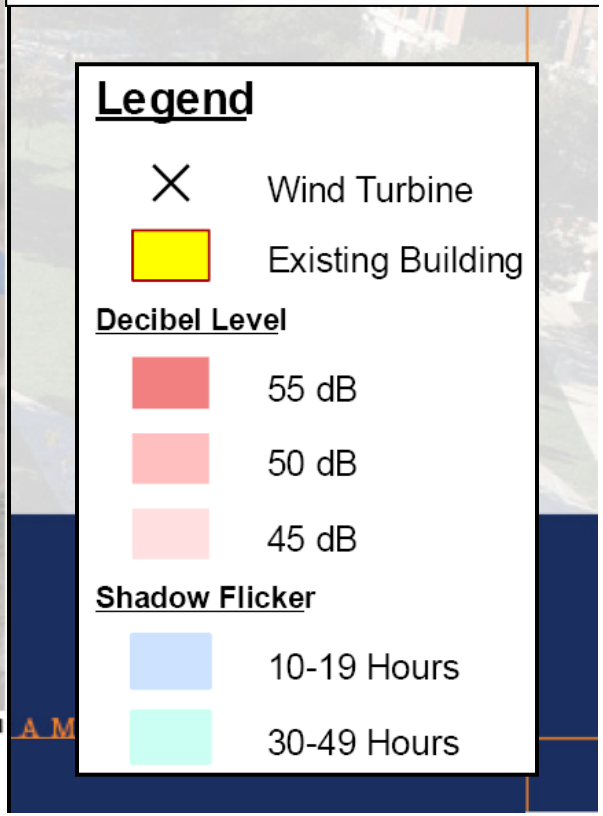
Navigant Consulting, Inc.



- Present/planned uses
- Proximity to residential areas
- Access to the electrical underground distribution system
- Elevation
- Proximity to airport runways







ILLINOIS

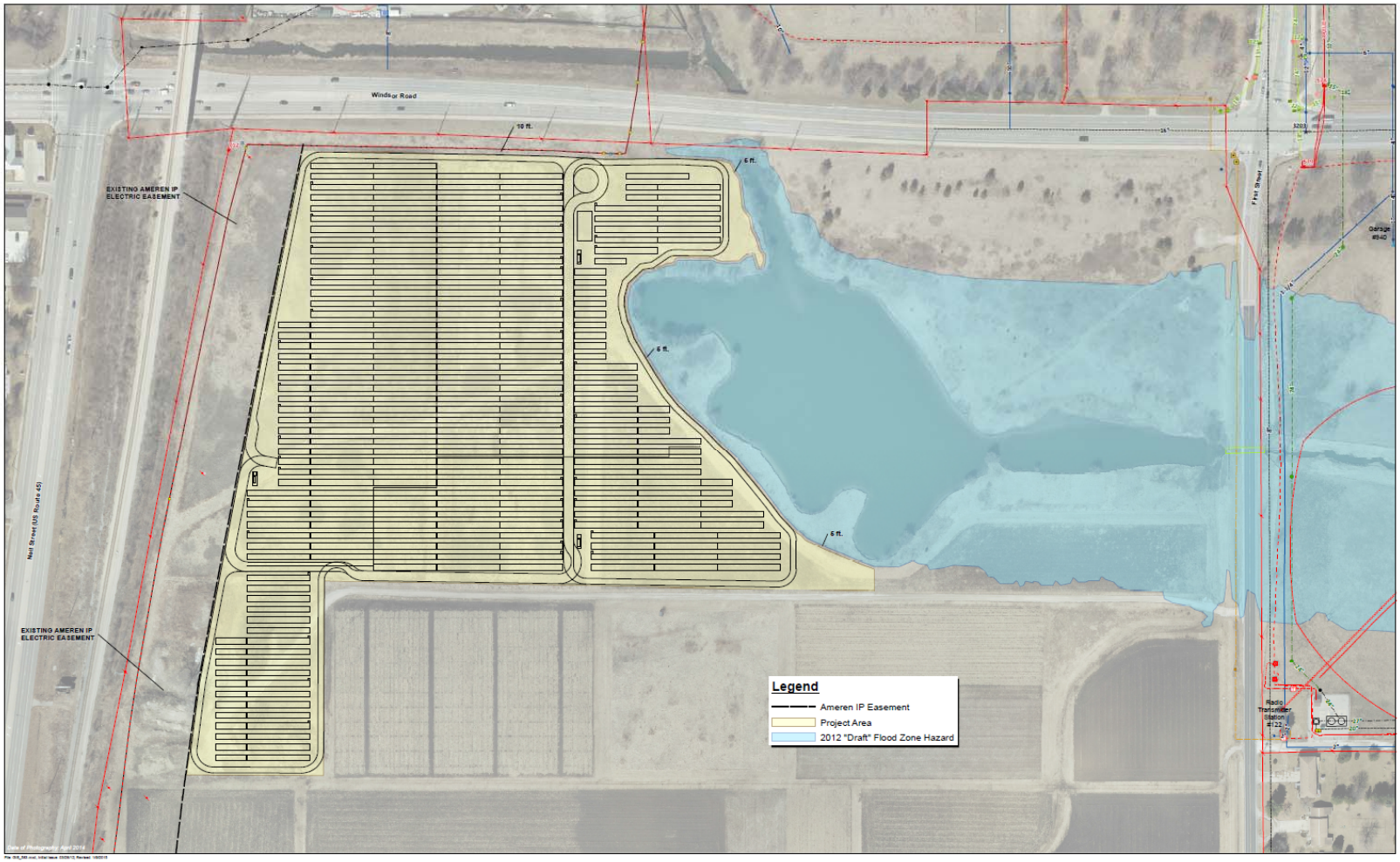
PROPOSED ORIGINAL LOCATION
FOR WIND TURBINE 3
Wind Turbine Project

Wind Turbine

$5.2 M Budget

Illinois Clean Energy Community Foundation	$2M
Utilities & Energy Services	$1M
Student Cleaner Energy Fee	$640K
Office of the Chancellor	$500K
Office of the President	$640K
Shortfall	($420K)

Solar Farm


Windsor Road
10 ft.
6 ft.
6 ft.
6 ft.
EXISTING AMEREN IP ELECTRIC EASEMENT
EXISTING AMEREN IP ELECTRIC EASEMENT
Neil Street (US Route 45)
Flat Street
Garage #0442
Radio Transmitter Station #122
Legend
Ameren IP Easement
Project Area
2012 "Draft" Flood Zone Hazard
UTILITIES AND ENERGY SERVICES
0 40 80 160 240 320
Feet
FIGURE 4
SOLAR FARM PROJECT
University of Illinois, Urbana - Champaign Campus

Solar Farm

$5.3 M Budget

Utilities & Energy Services	**$4.25M**
Student Cleaner Energy Fee	**$1.05K**

The total cost is actually projected to be over $15M, but there will be a reduction in the cost of electricity purchased from conventional sources.

Solar Farm vs. Wind Turbine

- $5.3 Million, subsidy
- 5.87 MWp
- 2.1% Electricity for Campus
- Power Purchase Agreement

- $5.2 Million, installation
- 1.65 MWp
- 0.8% Electricity for Campus
- Design / Build

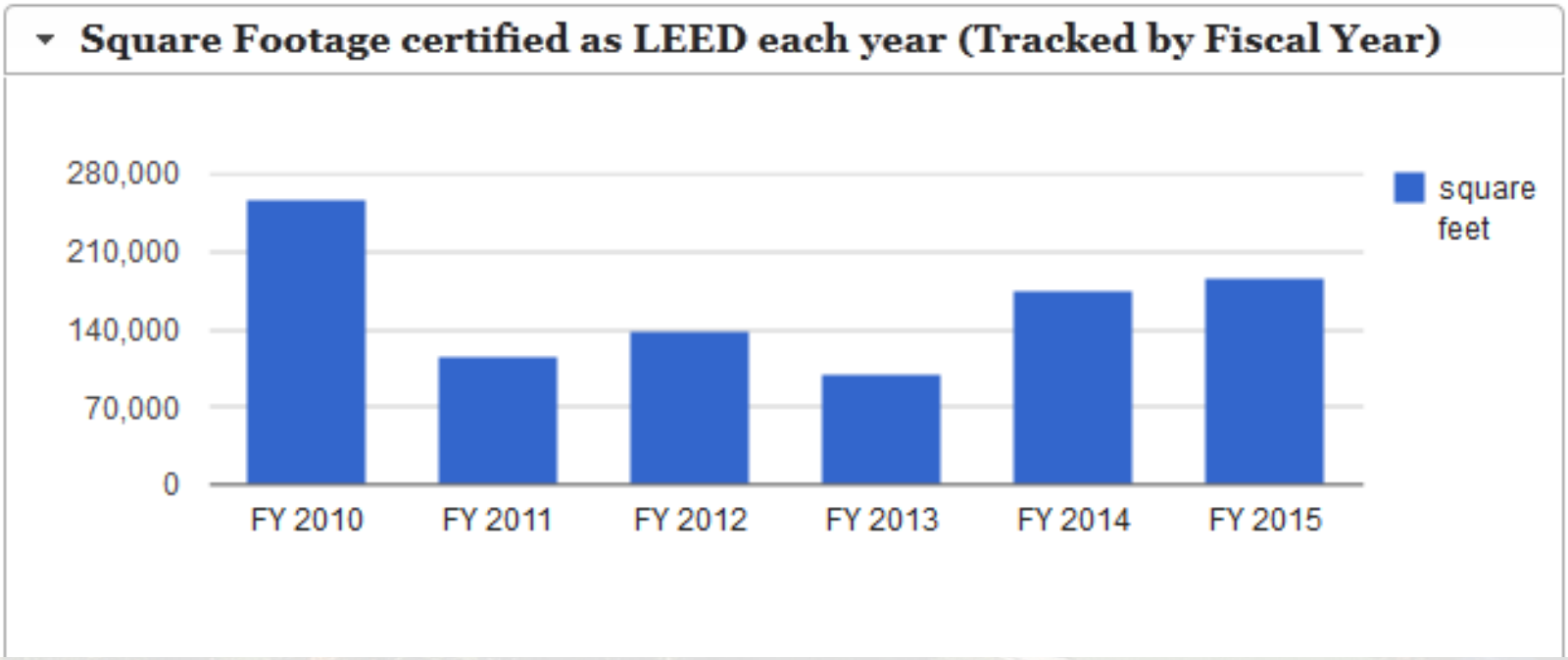
Renewables at U of I

- Various small scale installations of solar photovoltaics
- Solar thermal on campus recreation building for heating pool water
- Geothermal at Allerton Park
- Renewable Energy Certificates purchased

Solar Photovoltaics (PVs)

- 2006 Business Instructional Facility
- 2014 Electrical and Computer Engineering Building
- Ground Mounted PVs at Building Research Council, & Solar Farm
- Future buildings/retrofits

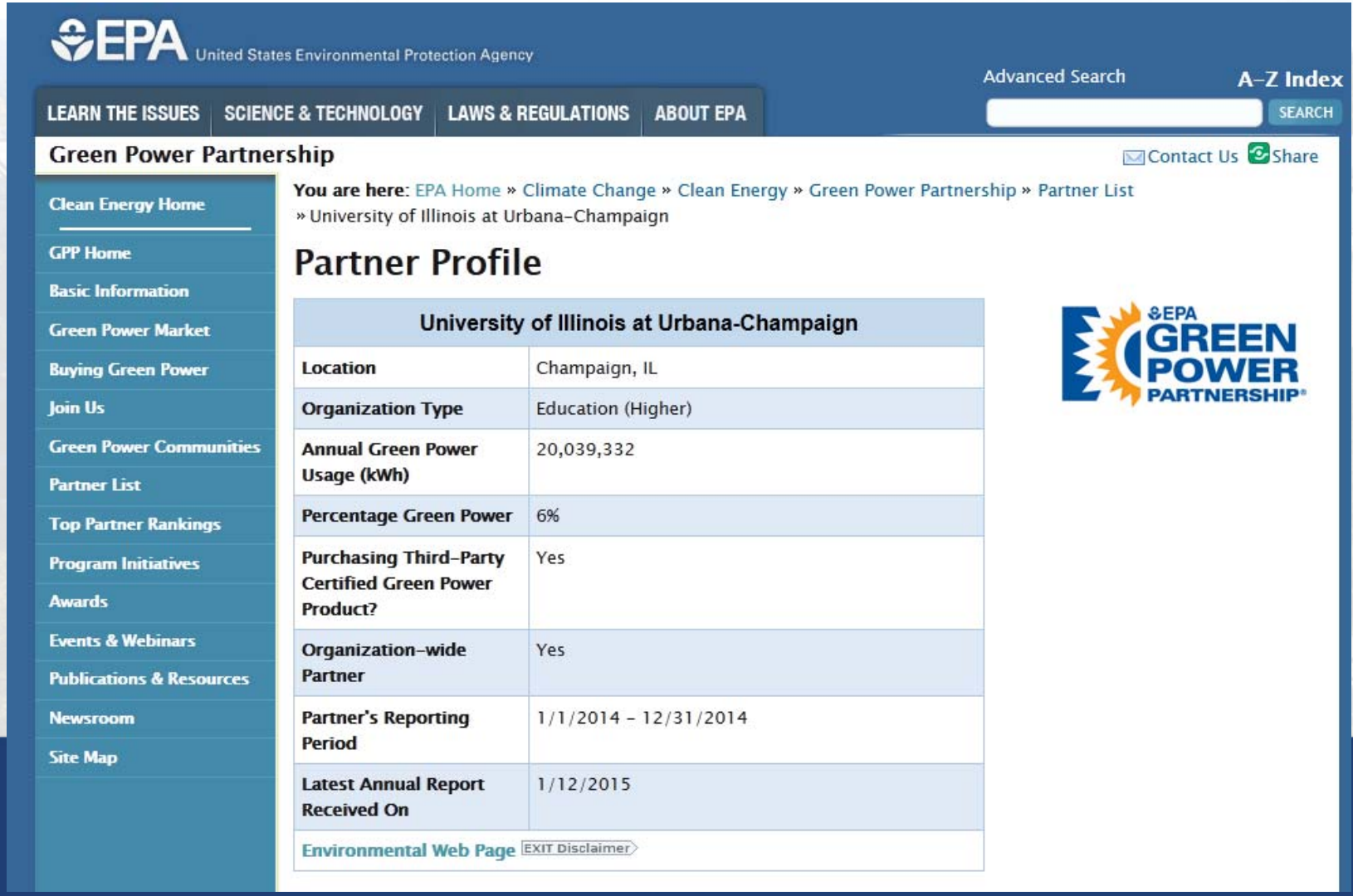
LEED buildings



Renewable Energy Certificates

- Campus bought 20,000,000 kWh for FY15.
- They are MISO Wind RECs.
- Without Petascale, this represents 5.28% of projected electricity demand.
- Including Petascale, this represents 4.25% of projected electricity demand.
- A half year of the solar farm would bring this up to 5%.
- The cost was $1.25/MWh for a total of $27,000.

EPA Green Power Partnership



EPA United States Environmental Protection Agency

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Partner Profile

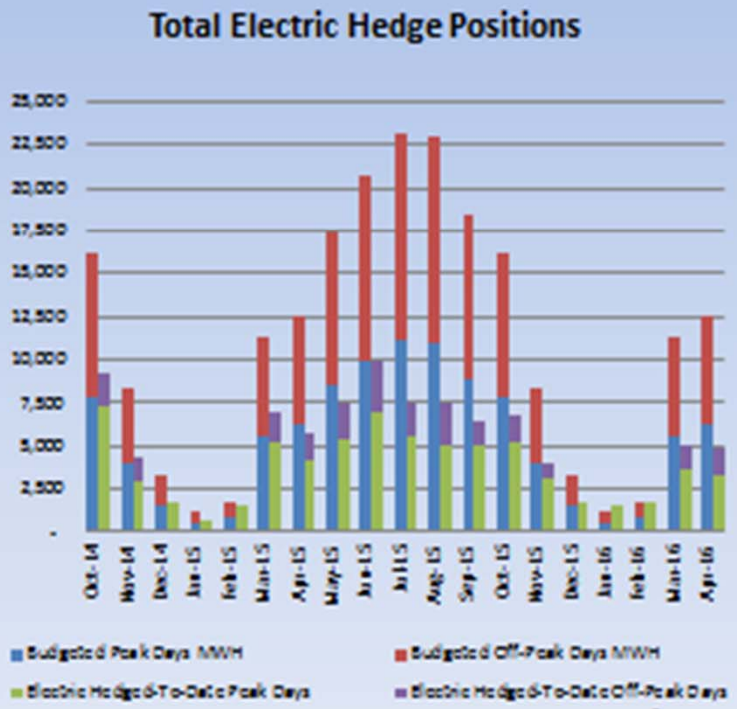
University of Illinois at Urbana-Champaign	
Location	Champaign, IL
Organization Type	Education (Higher)
Annual Green Power Usage (kWh)	20,039,332
Percentage Green Power	6%
Purchasing Third–Party Certified Green Power Product?	Yes
Organization–wide Partner	Yes
Partner's Reporting Period	1/1/2014 – 12/31/2014
Latest Annual Report Received On	1/12/2015
Environmental Web Page EXIT Disclaimer	

EPA GREEN POWER PARTNERSHIP

Wind PPA?

How we currently purchase electricity

- Electrical Hedge Purchase
  - Peak 16 Hours Only
  - Mostly Peak (work) Days
  - Some Off-Peak Days
    - Weekends
    - Holidays
- Block Purchases
  - January 2015 Example Peak
    - 5 x 16 Hours @ 2 MW
    - 21 Peak Days
    - 672 MWh purchase



Next Steps

- Update the Climate Action Plan - FY15
- Complete the Utilities Master Plan

Conserve! Conserve! Conserve!

Questions

Facilities & Services
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Email: mbjohnst@illinois.edu