

# Cost of Pricing Carbon

## Moderator

Jeanne Fox: NJ Board of Public Utilities

## Panelists

Paul Sotkiewicz: PJM

Sonny Popowsky: Consumer Advocate of Pennsylvania

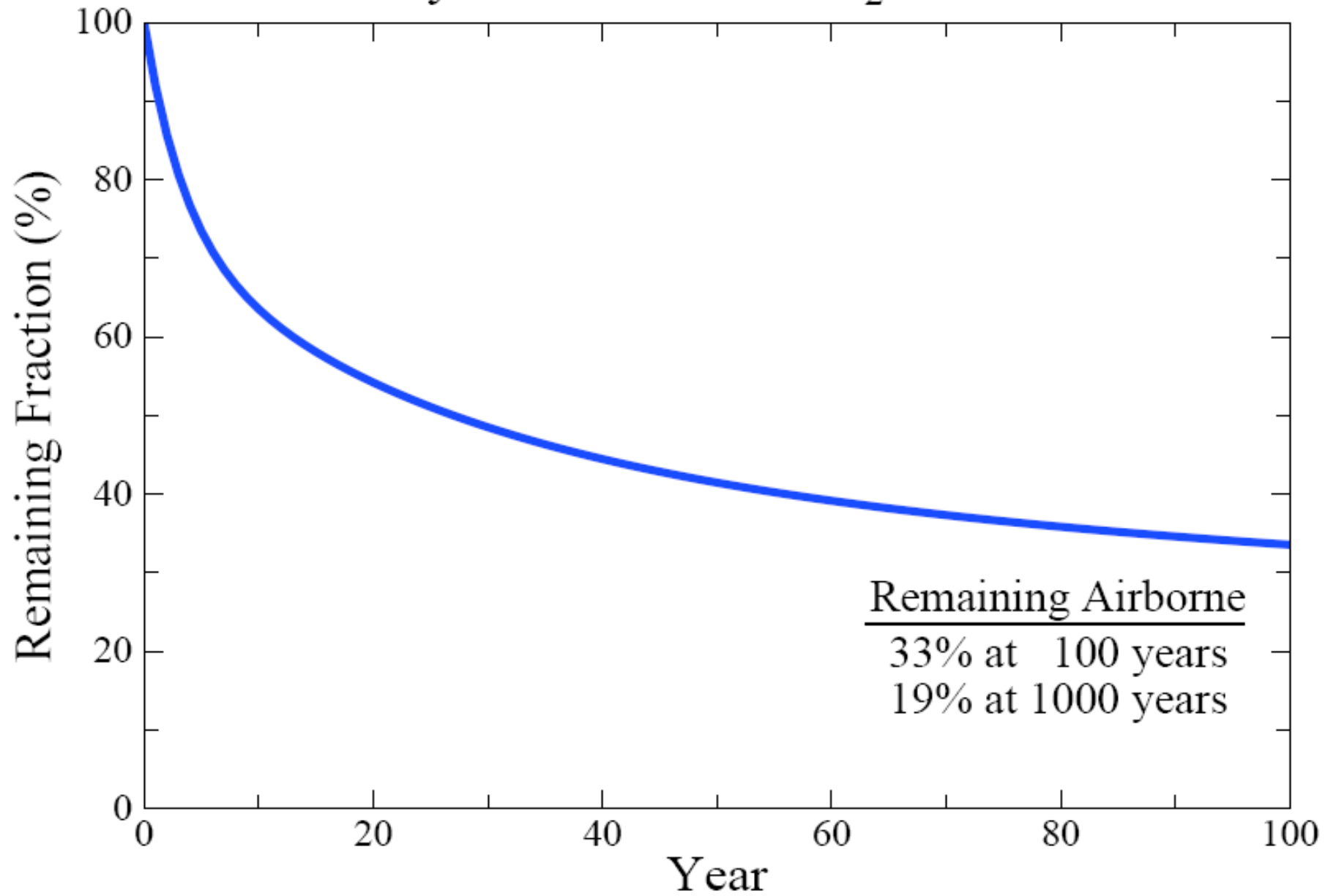
Rick Weston: Regulatory Assistance Project

Allen Freifeld: Viridity Energy

MACRUC Annual Conference

June 23, 2009

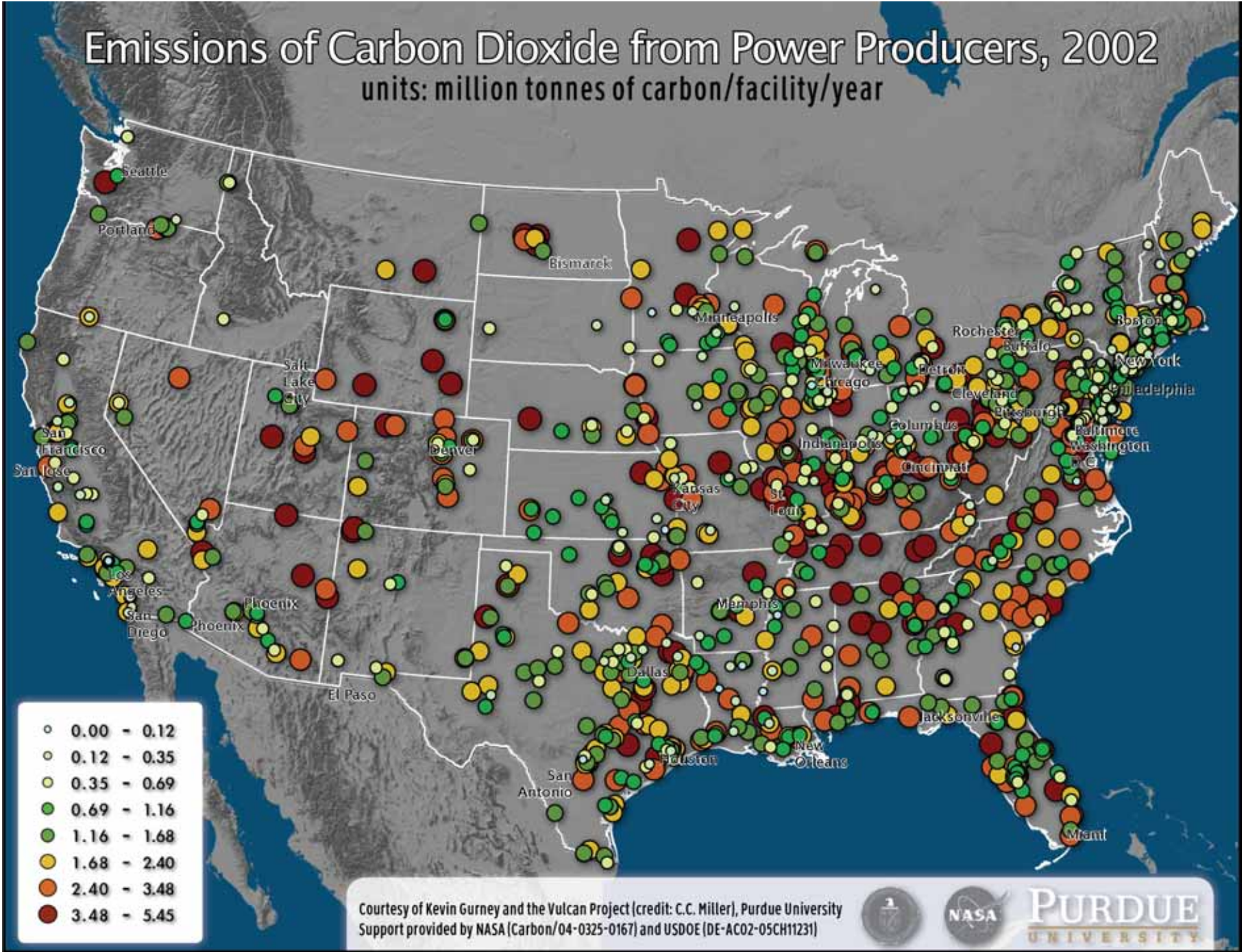
## Decay of Fossil Fuel CO<sub>2</sub> Emission



Source: *Atmos. Chem. Phys.* **7**, 2287-2312, 2007 via presentation from NASA's Jim Hansen

# Emissions of Carbon Dioxide from Power Producers, 2002

units: million tonnes of carbon/facility/year



Courtesy of Kevin Gurney and the Vulcan Project (credit: C.C. Miller), Purdue University  
Support provided by NASA (Carbon/04-0325-0167) and USDOE (DE-AC02-05CH11231)

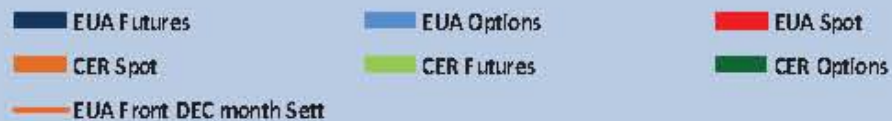


## What are Carbon Prices Now?

- Regional Greenhouse Gas Initiative (RGGI) ~ \$3
- Chicago Climate Exchange (CCX) ~ \$1
- Europe's 2009 ~ €12 or \$15

## Monthly Volumes: EUA & CER Futures and Options

### ECX Monthly Volume & Settlement Price



Source: European Climate Exchange May 2009 Report

## Carbon in PJM Markets

- Coal is on the margin ~ 70% percent of the time
- Coal -> Natural gas expected ~ \$40

## Issues to Consider

- How do we reconcile the current market prices with some prices suggested via this PJM study?
- Should nuclear generators be given the CO2 profits windfall?
- How can demand-side resources like energy efficiency and demand response play a greater role in existing PJM markets to mitigate the carbon price shock from all those coal based units on the margin?

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## PJM White Paper

[www.pjm.com/documents/~media/documents/reports/20090127-carbon-emissions-whitepaper.ashx](http://www.pjm.com/documents/~media/documents/reports/20090127-carbon-emissions-whitepaper.ashx)

## Carnegie Mellon Paper

<http://pubs.acs.org/doi/full/10.1021/es071749d>

## Vulcan Project

[www.purdue.edu/eas/carbon/vulcan/index.php](http://www.purdue.edu/eas/carbon/vulcan/index.php)

[www.youtube.com/watch?v=eJpj8UUMTaI&feature=email](http://www.youtube.com/watch?v=eJpj8UUMTaI&feature=email)

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