CENTER FOR RENEWABLE ENERGY
Illinois State University

Are Renewable Portfolio Standards a Policy Cure-All? A Case Study of Illinois' Experience

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IRPS

Overview

- Introduction and Background on Illinois Electricity Markets
- Goals of Illinois' RPS
- Procurement of Renewables
- Results to Date
- Surrounding States
- Conclusion and Policy Recommendations

Introduction and Background on Illinois Electricity Markets

Overview of Power Markets

- Illinois is the 5th largest electricity consuming state.
- There are 10 nuclear power plants and 21 major coal plants operating in the state
- Approximately 48% of the electricity in the state comes from nuclear power, 47% comes from coal and 5% comes from other resources.

Energy Regulation until 1996

- Power companies owned the power plants (coal or nuclear), the transmission lines, and the distribution lines that bring power into homes and businesses.
- Traditional “rate of return” regulation by the Illinois Commerce Commission gave state heavy influence over energy policy.

1996 Restructuring Act

- Customer Choice Act (find exact name) allowed Alternative Retail Electric Suppliers to market to customers and allowed the utilties to break into two companies: generation and distribution.
- Generation companies owned the power plants (nuclear and coal) and were deregulated.
- Distribution companies owned the lines into homes and continued to be regulated.

Electricity Markets after 1996

- 1996 - Electric rates for customers were cut 20% and frozen for 10 years.
- Exelon and Ameren formed as holding companies for both new generation companies and old distribution companies. Functional but not structural separation creates odd incentives.
- Exelon sold all coal plants to Edison Electric (Midwest Generation) but kept all nuclear plants.

Illinois Energy Policy 2007-2009

- 2007 – Passage of the Renewable Energy & Energy Efficiency Standards
- 2007 – Rate freeze lifted, Illinois Power Agency created
- 2008 – Passage of the Net Metering standard
- 2009 – Expansion of the Renewable Energy Standard
- 2009 – Consideration of federal renewable and carbon cap legislation.

Illinois Energy Policy
Energy Efficiency Standard

- Energy Efficiency Targets: 0.2% by 2008, 1.0% by 2012, 2.0% by 2015.

- Utility administered energy efficiency programs – CFLs, energy efficiency retrofits for homes and businesses, boilers, furnaces, air conditioning, and appliance efficiency programs.

- Likely outcome – millions of avoided kwh, therms and tons of carbon dioxide. Estimated $3 billion in ratepayer savings in avoided energy costs.

Illinois Energy Policy Net Metering Standard

- Net metering law allows customers sell excess energy they generate with a renewable devise on their property, back to the utility.

- Example: solar electric panels on a home – homeowner needs 800 kwh per month; panels generate 1,000 kwh per month. Homeowner's entire electric bill is zero and they sell back to the grid the extra 200 kwh at about $0.06 per kwh.

- Very good policy for giving homeowners a reasonable incentive to install renewable energy generators on their property.

Goals of Illinois' RPS

After passage of Illinois RPS

- "Developing wind power, a 'no-CO2' energy source, can help to solve our global warming problems. Renewable energy is good for farmers, good for rural economic development and good for the environment. Furthermore, implementing robust energy efficiency programs will provide long-term bill savings for Illinois ratepayers while improving the environment."
  - Howard A. Learner, executive director of the Environment Law and Policy Center, Aug. 2007

Illinois Energy Policy
Renewable Energy Standard

- Renewable Energy Target: 2% by 2008, 10% by 2015, 25% by 2025.

- Eligible Resources: Wind, solar electric, solar thermal, geothermal, biomass, landfill gas, existing hydro, biodiesel, trees and tree trimmings.

- Likely outcome – over 8,000 megawatts of renewable energy built in Illinois by 2025, enough to power more than 2,000,000 homes.

Consumer Price Protection (for 2010)

- Maximum cost standard on renewables in the statute for that delivery period is the greater of an additional 0.5% of the amount paid per kilowatt-hour by those customers during the year ending May 31, 2009 or 1.5% of the amount paid per kilowatt-hour by those customers during the year ending May 31, 2007

Procurement of Renewables

2008 and 2009 REC Procurement

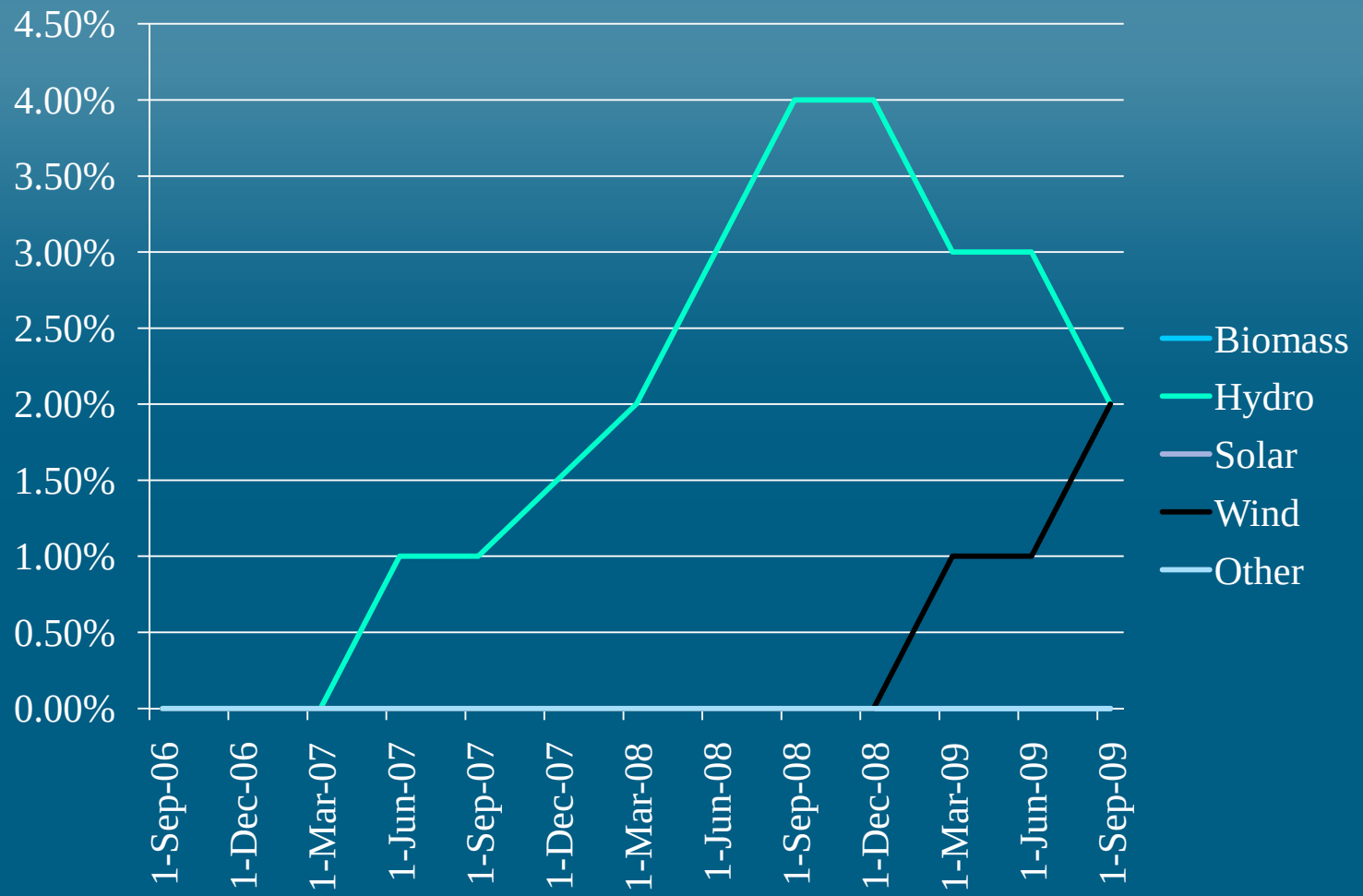
- Different Program Administrators for ComEd and Ameren
- Annual purchase of RECs to satisfy RPS requirements
- No long term contracts

2010 Procurement Plan

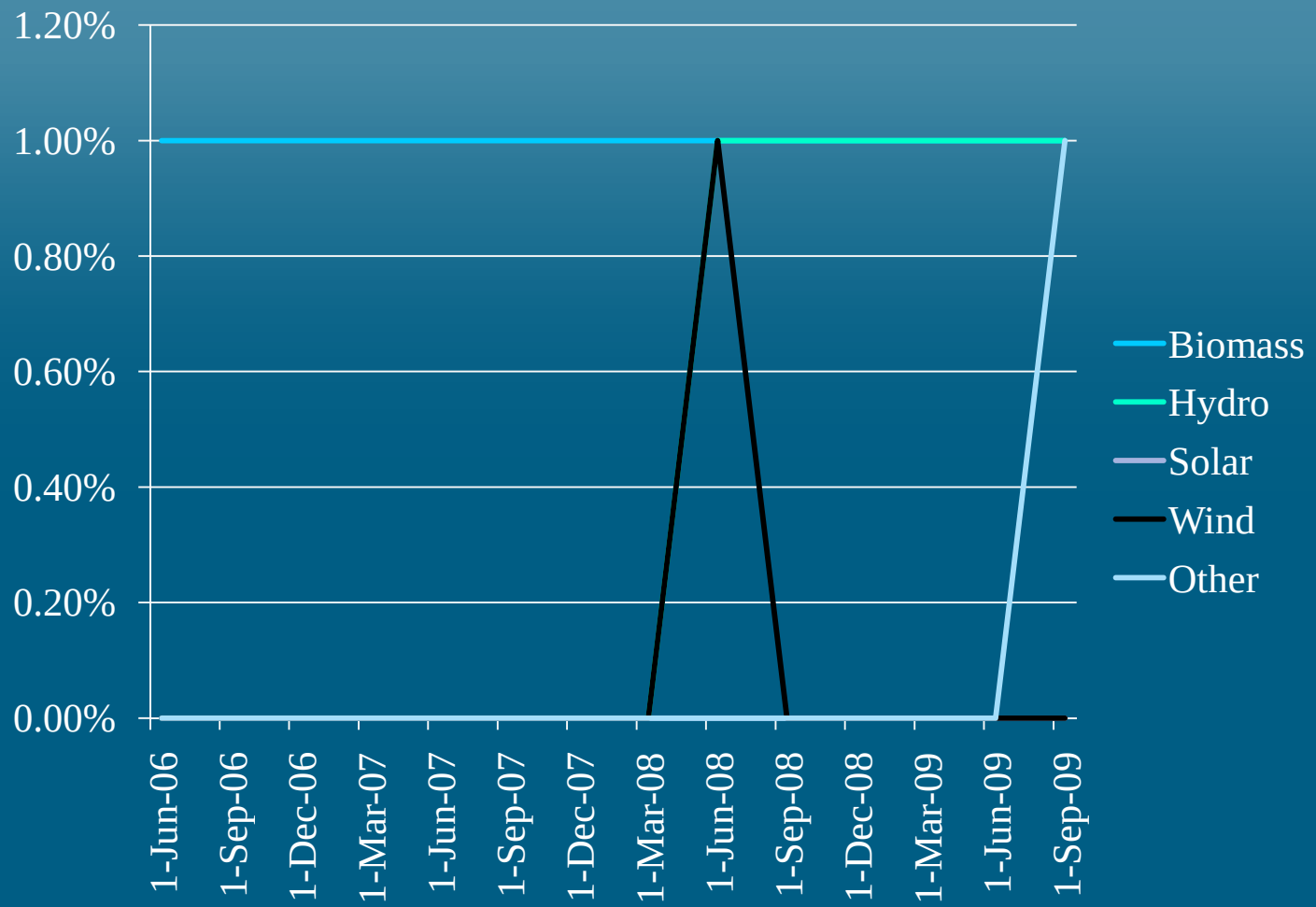
- Includes long term contracts for about half the RPS requirement in 2010-2011
- Balance procured using previous process
- Long term contract includes electricity – how to separate REC from electricity.

Results to Date

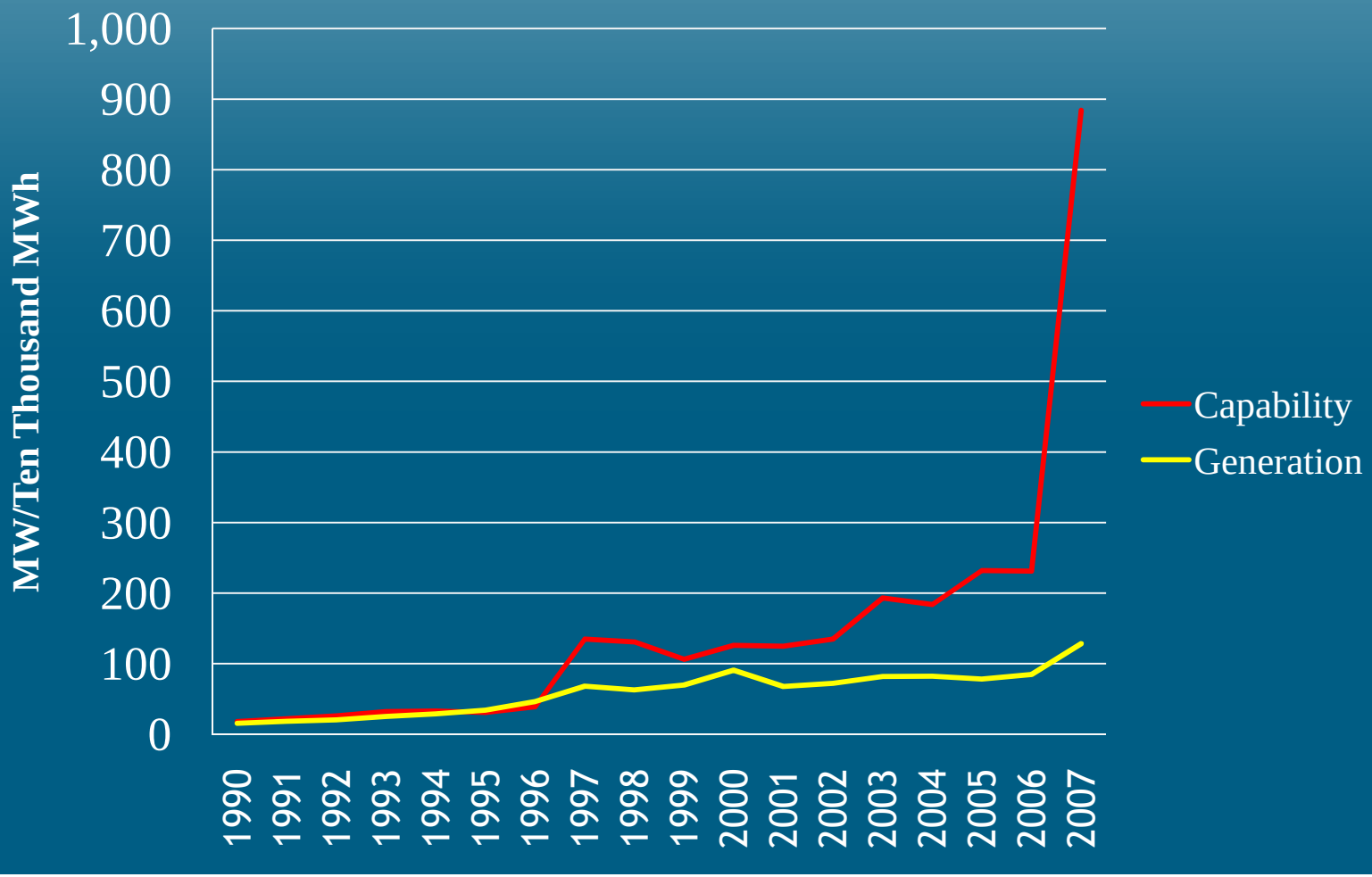
AmerenIP Fuels



Commonwealth Edison Fuels



Illinois Non-hydro Renewable Growth



2008 RPS REC Prices

ComEd	Wind RECs	Non-Wind RECs
Illinois	$35.72	$21.85
Adjoining State	18.35	5.74
Other State	7.34	4.25

Ameren	Wind RECs	Non-Wind RECs
Illinois	$29.32	$17.50
Adjoining State	21.20	5.50
Other State	5.65	N/A

In-State Preference 2008-2009

- 2008-2009 procurement (ICC and Utilities)
  - ‘Illinois’ sources were purchased regardless of price
  - Then contiguous states and others were purchased

2009 RPS REC Prices

ComEd	Wind RECs	Non-Wind RECs
Illinois	$21.13	$13.69
Adjoining State	N/A	N/A
Other State	N/A	N/A

Ameren	Wind RECs	Non-Wind RECs
Illinois	$16.66	$13.46
Adjoining State	N/A	N/A
Other State	N/A	N/A

In-State Preference 2009-2010

- 2009-2010 procurement (IPA) IPA created a market benchmark for REC's
  - Based upon a firm definition of REC's
  - REC's are the residual revenue necessary to incent the development of a wind asset in Illinois
  - The differential between the value of the output of a Wind Farm in Illinois and the cost to construct said asset

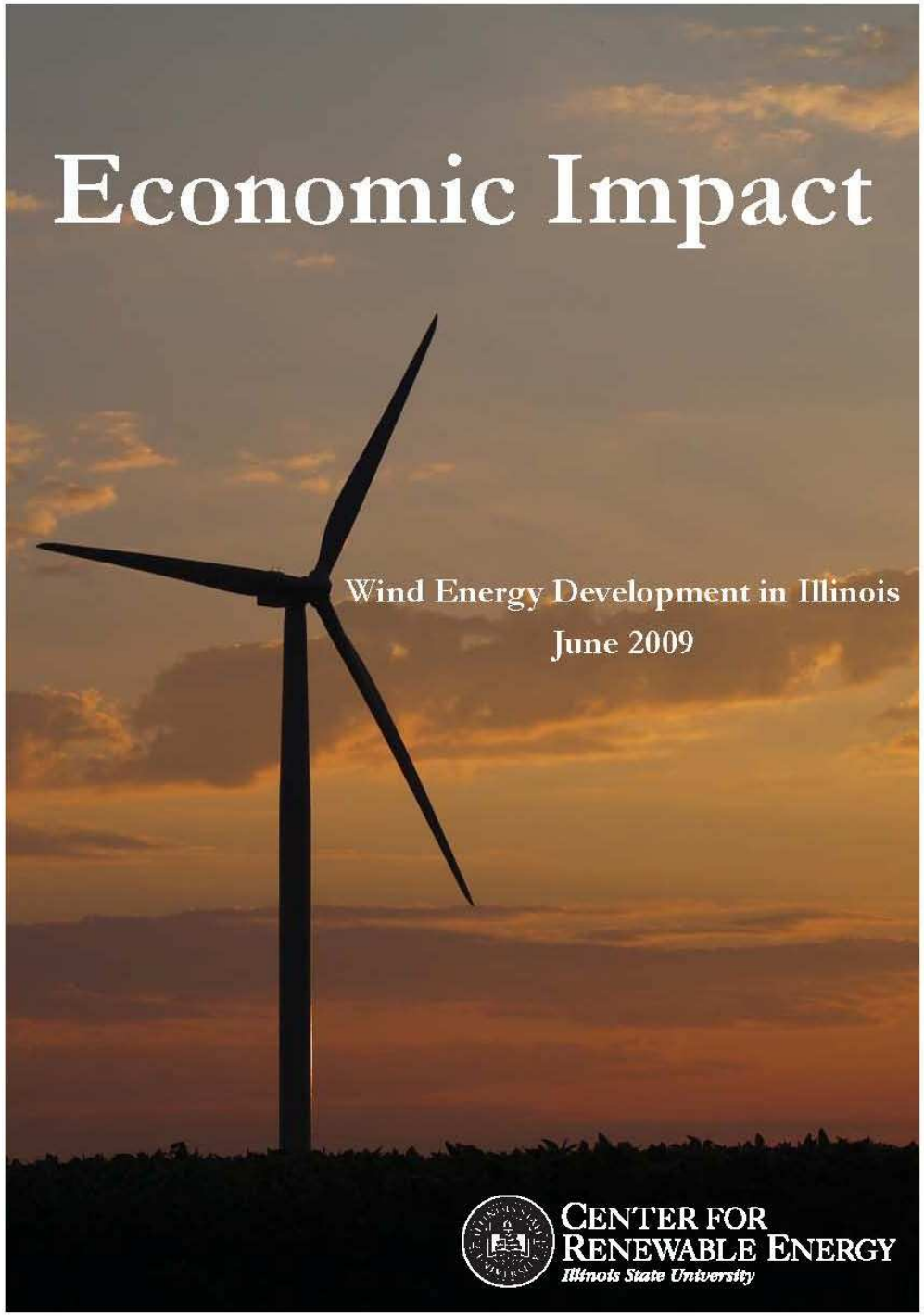
2010 Procurement

- Annual volume goal is 5% of the June 1, 2008 through May 31, 2009 eligible retail customer load

Projected 2010 RPS spending

	ComEd	Ameren
RPS Volume Target (MWh)	1,887,014	860,860
Renewable Energy Resource Budget	58,247,099	24,394,776
Average Price per Renewable Unit	$30.87	$28.34
Estimated Consumers Covered by RRB	3,746,747	1,190,808
Estimated Annual RPS Cost/Consumer	$15.55	$20.49

Economic Impact



Wind Energy Development in Illinois

June 2009

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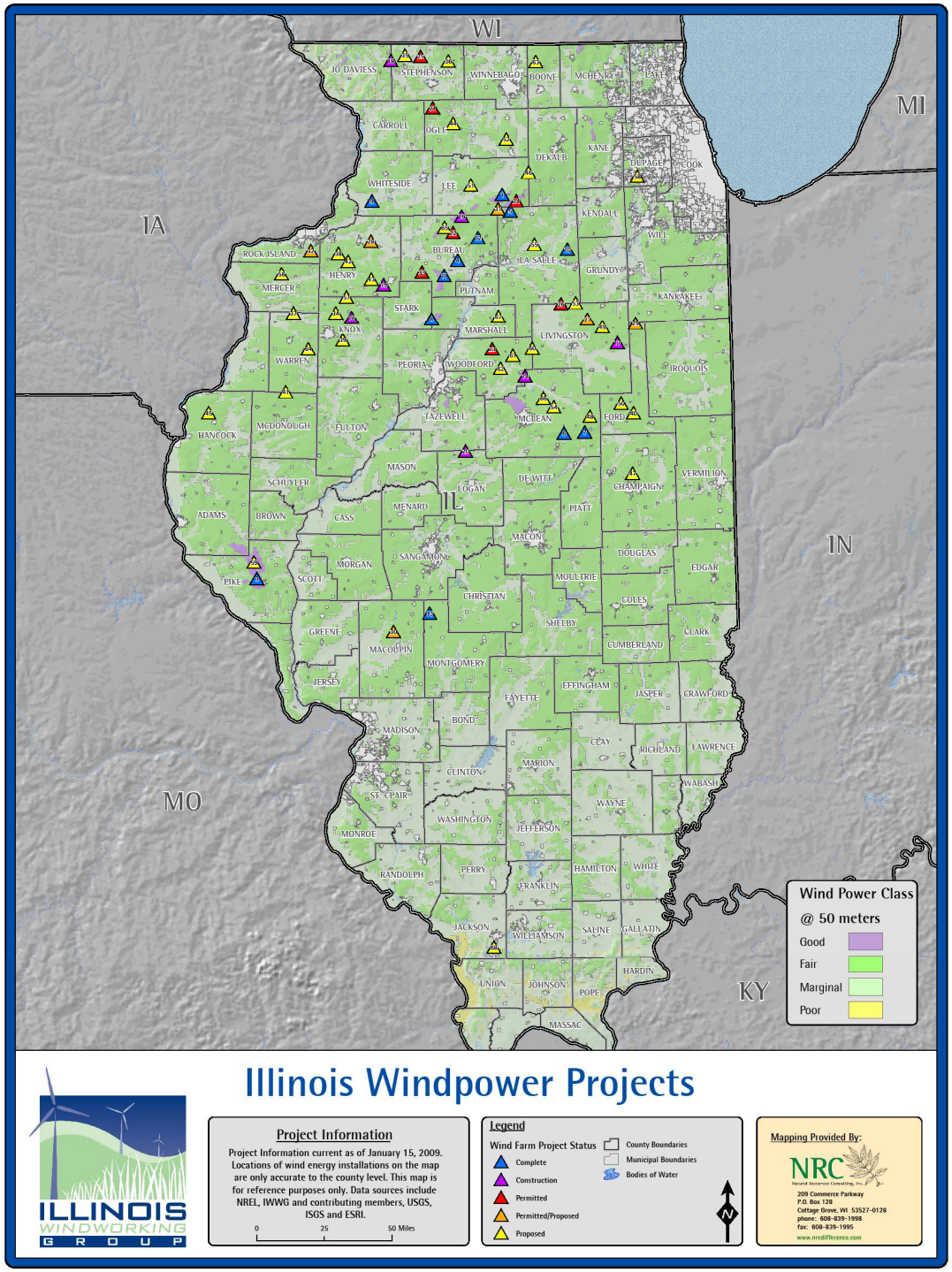
Table 3 - Economic Impacts from 1,118.76 MW of Wind Energy Development in Illinois

	Construction Phase Impacts	Operational Phase Impacts
Direct Impacts	934 jobs	65 new long-term jobs
On-site and Project Development	$86 million to local economies	$6 million/year to local economies
Indirect Impacts	3,426 jobs	104 local jobs
Turbine and Supply Chain Impacts	$499 million to local economies	$27 million/year to local economies
Payments to Landowners		$4.36 million/year
Local Property Tax Revenue		$11.4 million/year
Induced Impacts	1,658 jobs	124 local jobs
	$196 million to local economies	$15 million/year to local economies
TOTALS		
Jobs	6,019 jobs during construction	292 long-term jobs
Total Economic Benefit	$1.9 billion	

RPS EFFECT ON WIND ENERGY IN ILLINOIS



Illinois Windpower Projects

ILLINOIS WINDWORKING GROUP

Project Information

Project Information current as of January 15, 2009. Locations of wind energy installations on the map are only accurate to the county level. This map is for reference purposes only. Data sources include NREL, IWWG and contributing members, USGS, ISGS and ESRI.

0 25 50 Miles

Legend

Wind Farm Project Status
- Complete
- Construction
- Permitted
- Permitted/Proposed
- Proposed

- County Boundaries
- Municipal Boundaries
- Bodies of Water

N

Mapping Provided By:

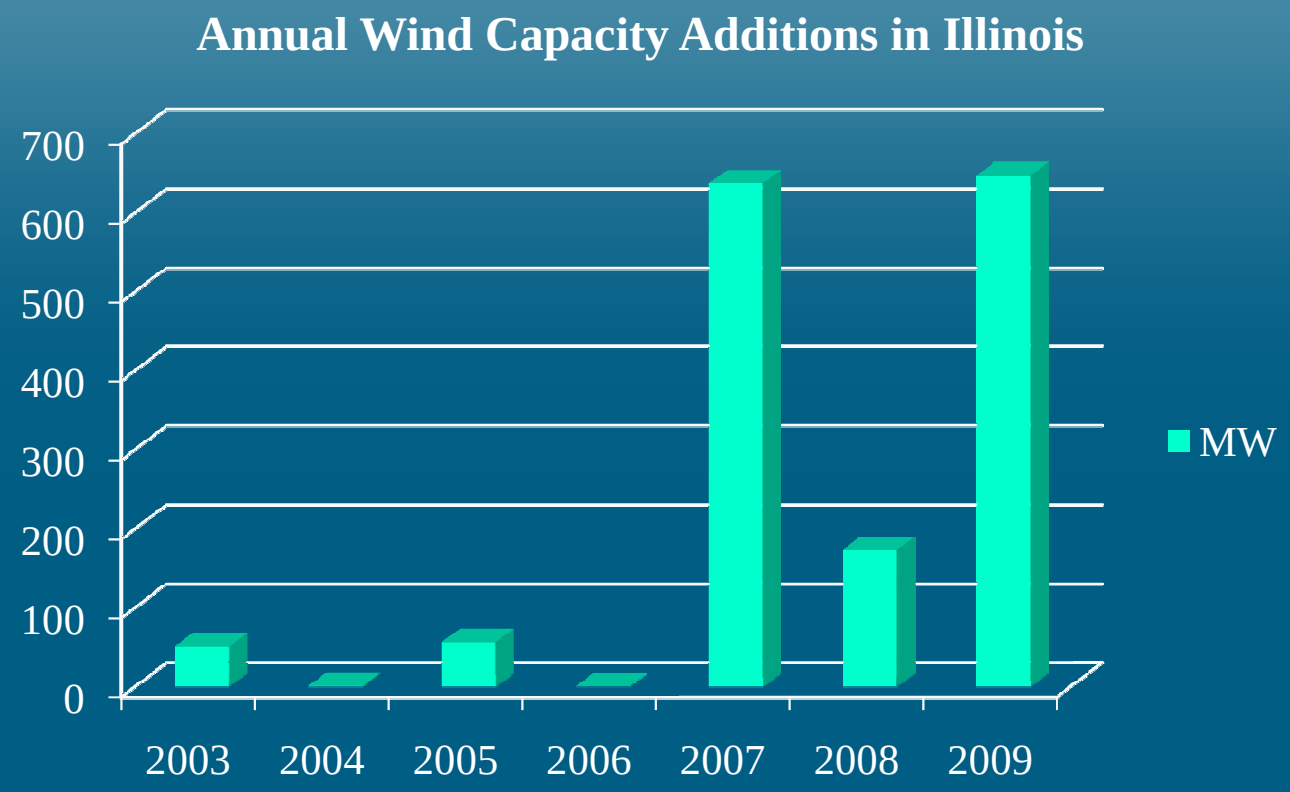
NRC
Natural Resource Consulting, Inc.
209 Commerce Parkway
P.O. Box 128
Cottage Grove, WI 53527-0128
phone: 608-839-1998
fax: 608-839-1995
www.nrcdifference.com

Table 1. -- Illinois Wind Farm Projects		
PROJECT	**LOCATION (COUNTY)**	**CAPACITY (MW)**
Twin Groves Wind Farm Phase I	McLean	198.00
Twin Groves Wind Farm Phase II	McLean	198.00
Camp Grove Wind Farm	Marshall and Stark	150.00
EcoGrove Wind Farm Phase I	Stephenson	100.50
Rail Splitter Wind Farm	Logan and Tazewell	100.50
Grand Ridge Wind Farm Phase I	LaSalle	99.00
GSG Wind Farm	Lee and LaSalle	80.00
Providence Heights Wind Farm	Bureau	72.00
Crescent Ridge Wind Farm	Bureau	54.45
Mendota Hills Wind Farm	Lee	50.40
Agriwind Wind Farm	Bureau	8.40
Turbine Adam	Lee	2.50
Illinois Rural Electric Cooperative	Pike	1.65
Erie Community Unit School District #1	Whiteside	1.20
Gob Nob	Montgomery	0.90
Bureau Valley School District	Bureau	0.66
Sherrard High School	Rock Island and Mercer	0.60

New Additions Since 7/09

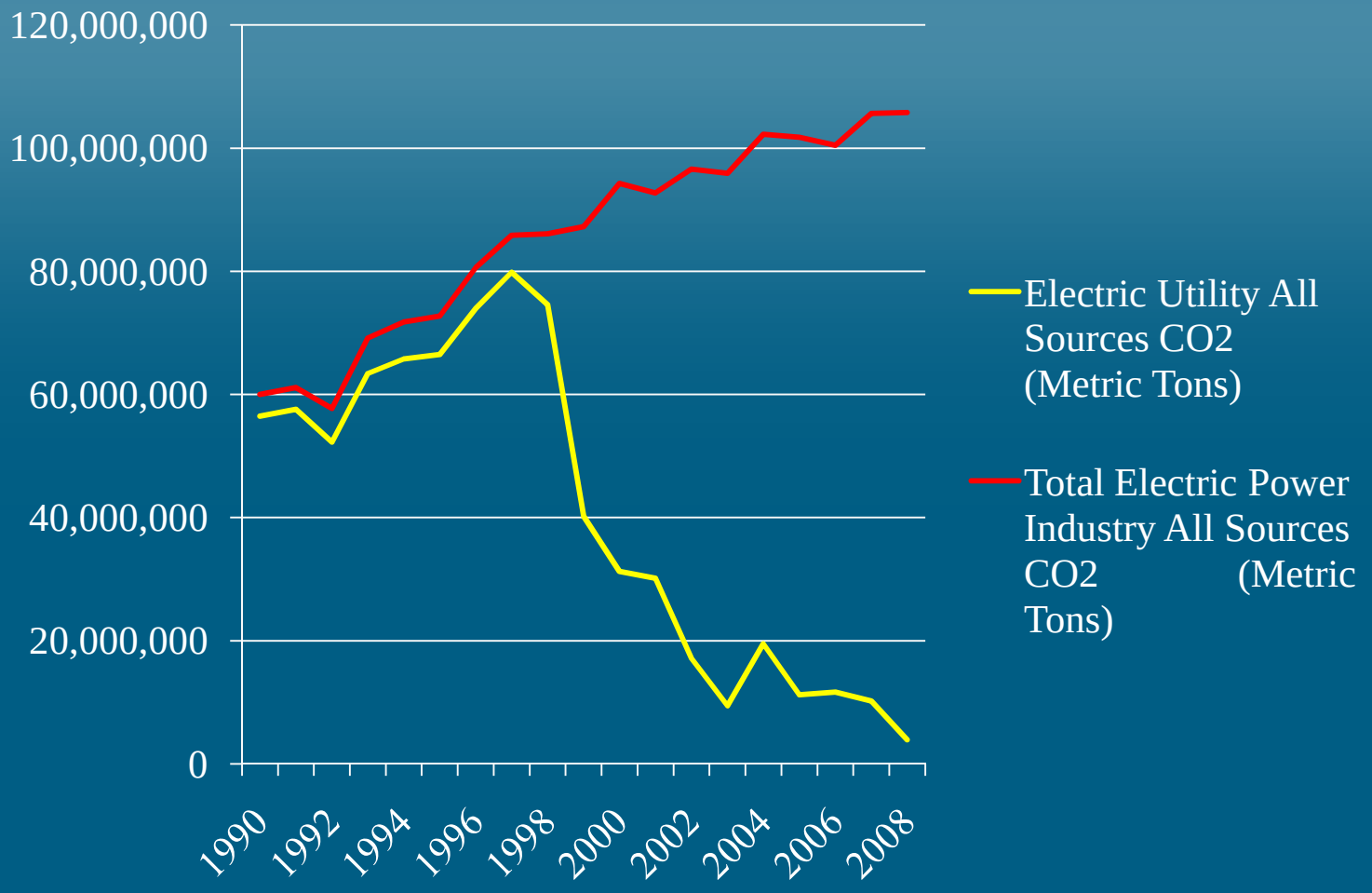
Project	Location	Capacity (MW)
Top Crop	LaSalle County	102.0
Grand Ridge	LaSalle County	111.0
Lee-DeKalb Wind Energy Center	DeKalb and Lee Counties	226.5
TOTAL in Illinois		1563.47

Graph of Wind Additions over Time

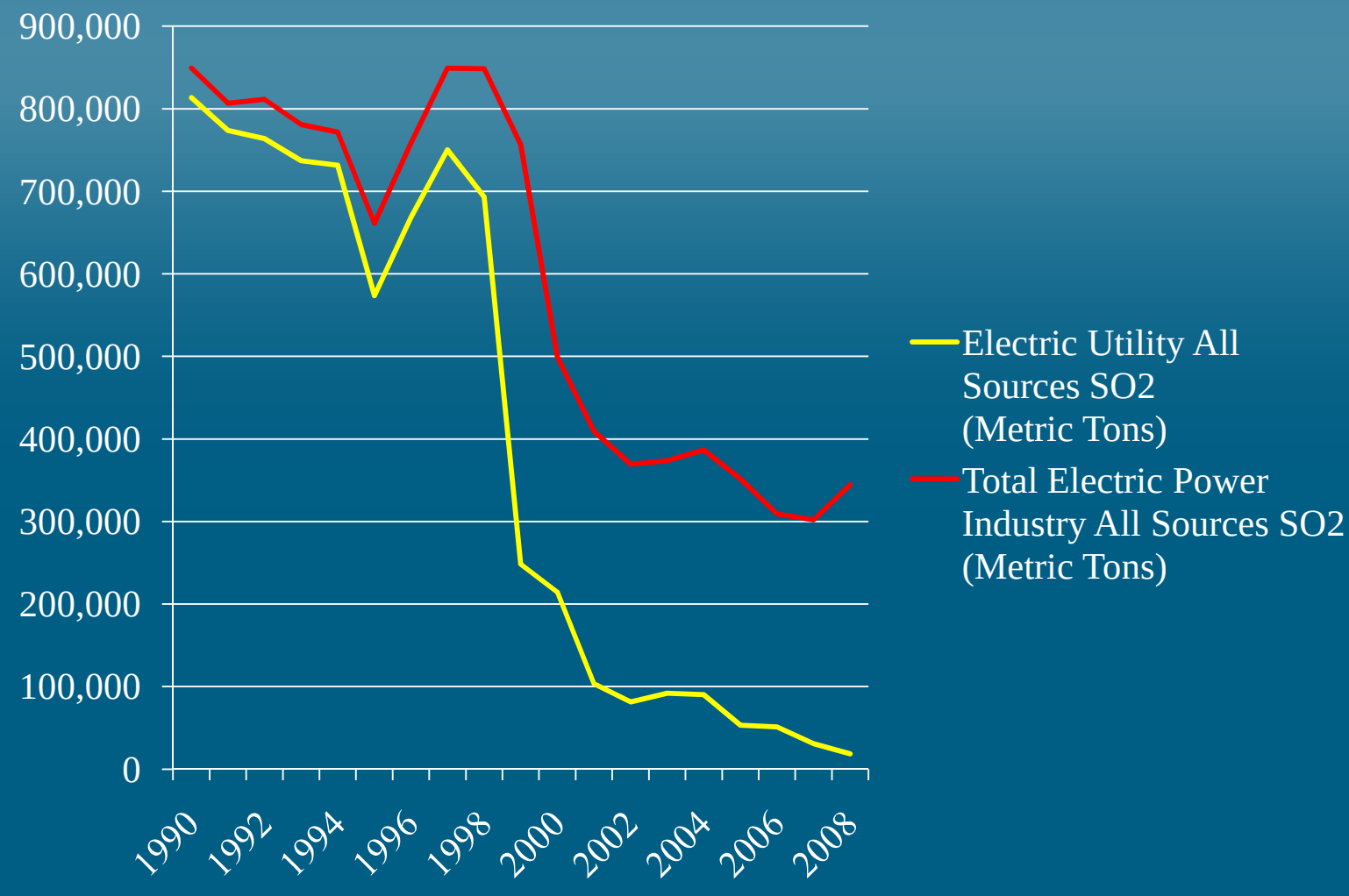


RPS EFFECT ON EMISSIONS

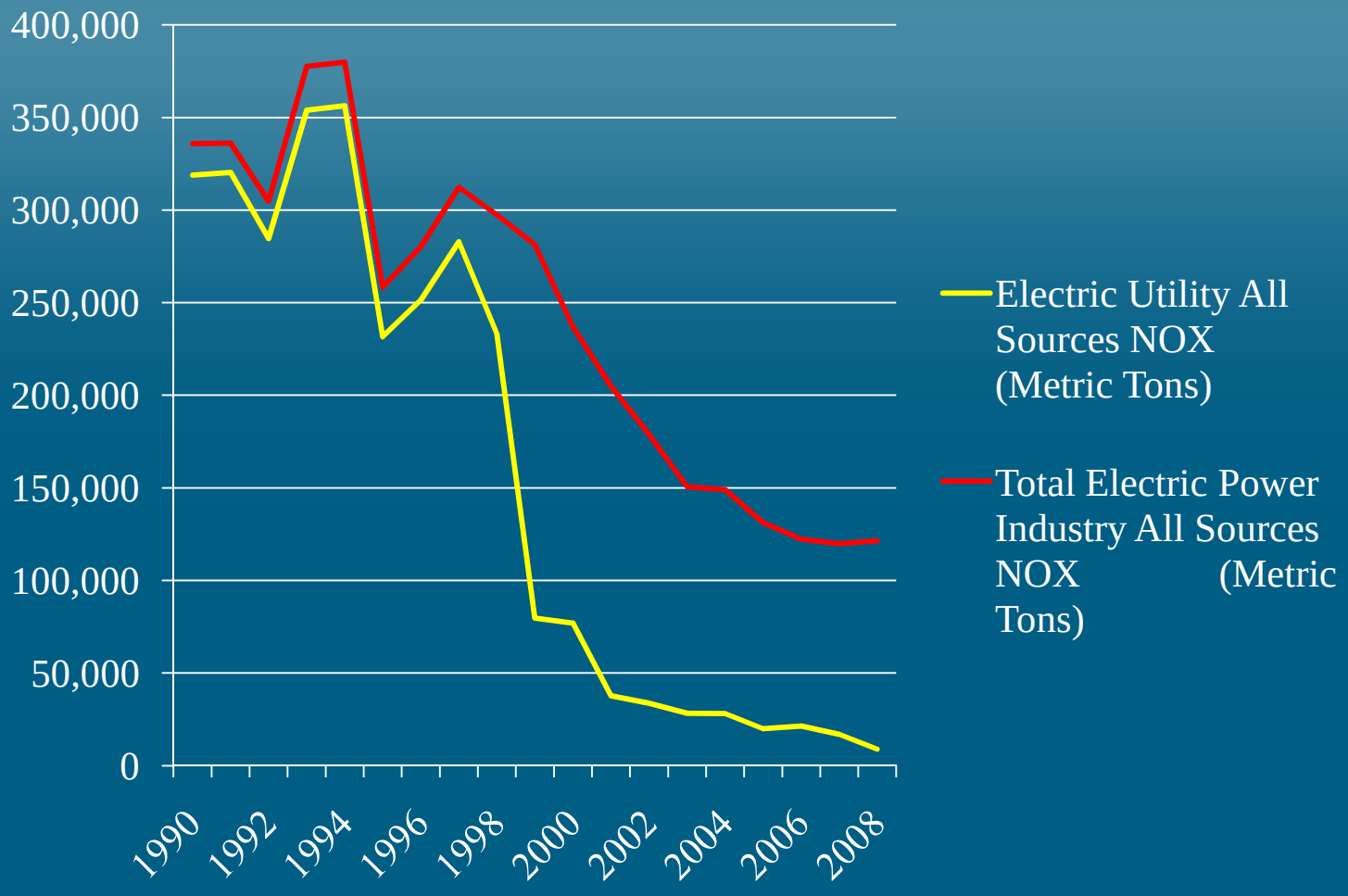
RPS Effect on CO_2 Emissions



RPS Effect on SO_2 Emissions



RPS Effect on NO_x Emissions

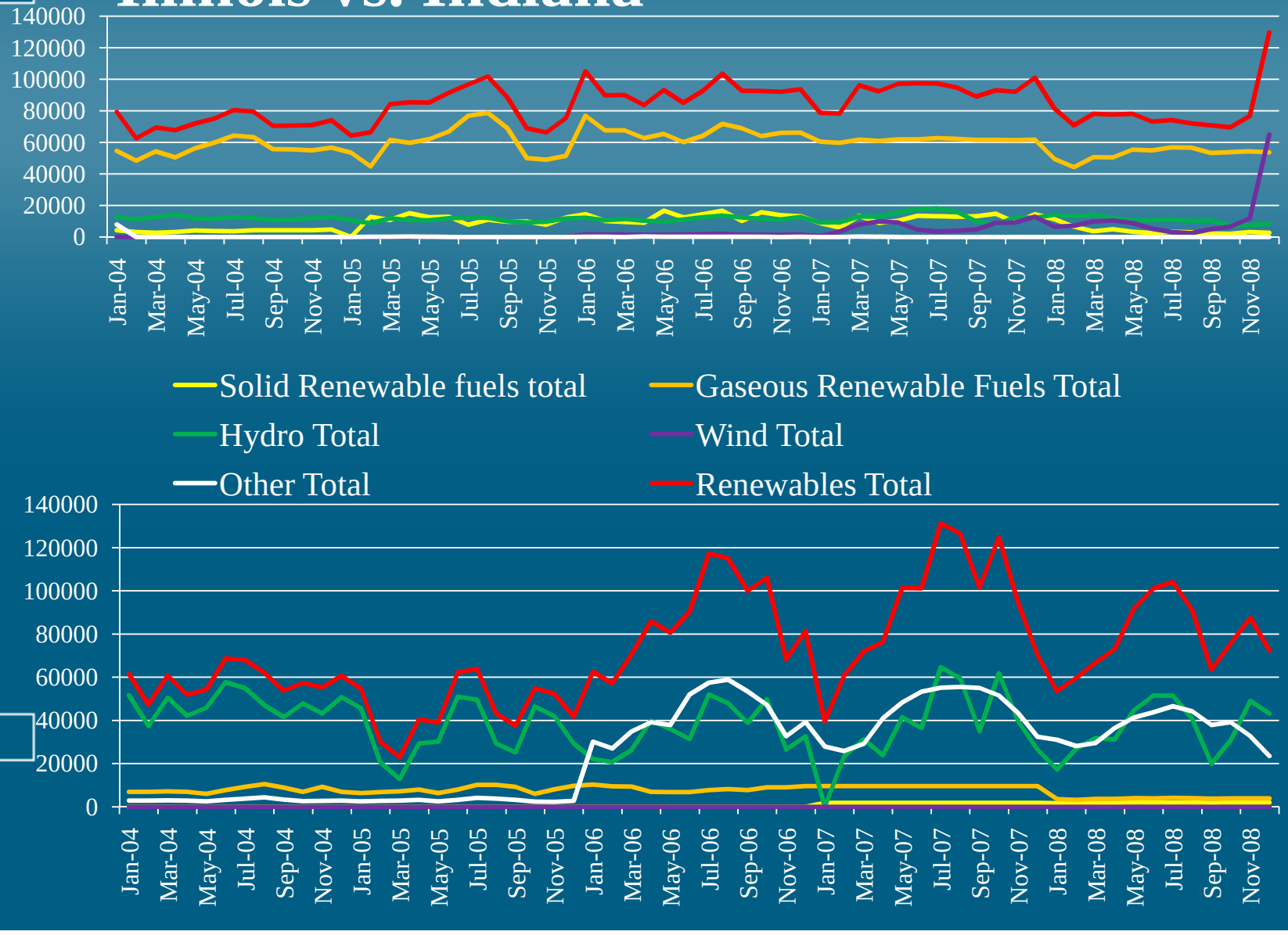


COMPARING STATES

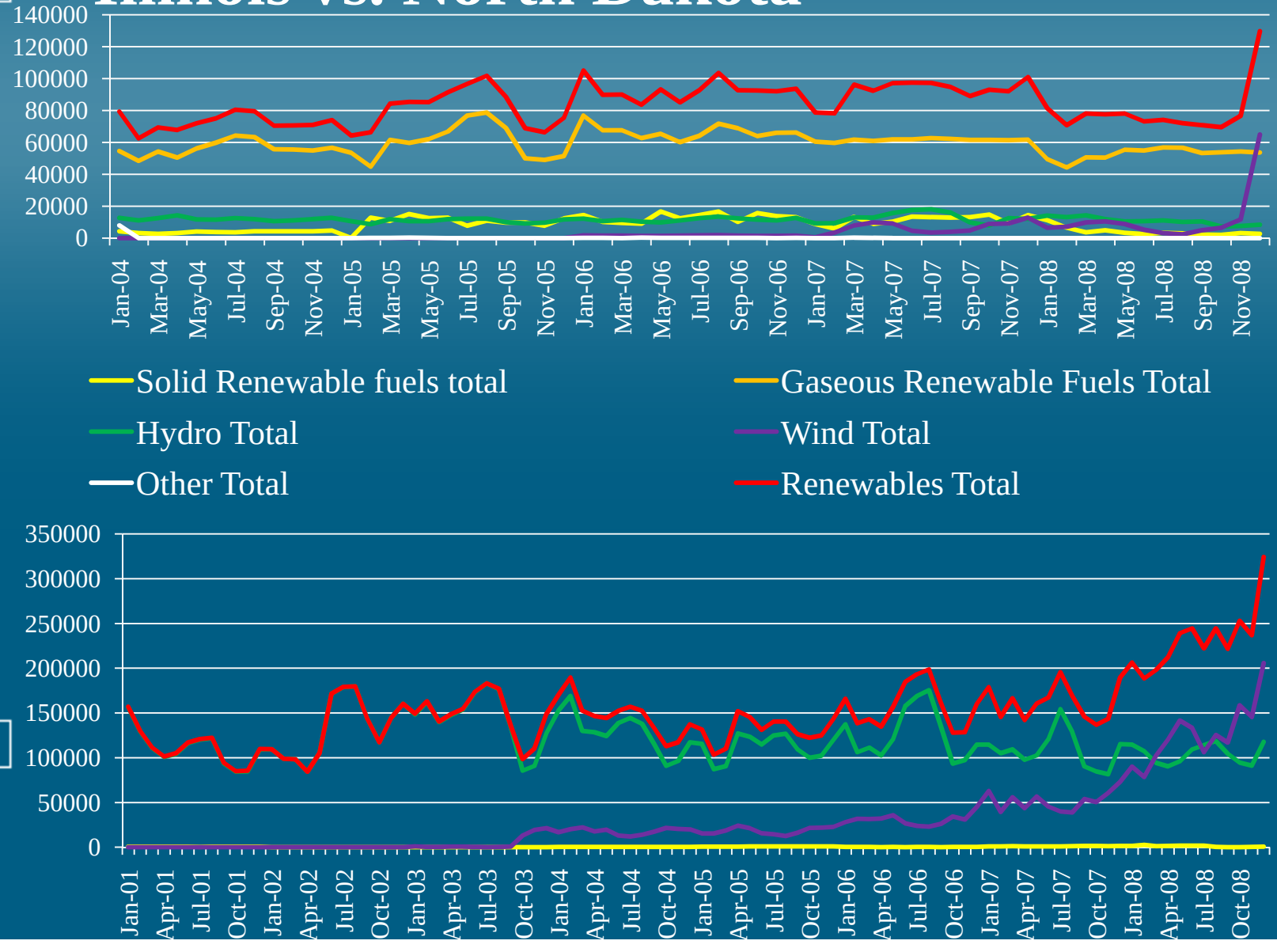
Surrounding States

- IL – 25% by 2025 – enacted 2007 – restructured
- WI – 10% by 2015 – enacted 1999
- IA – 105MW – enacted 1991
  - Alliant Energy fulfilling with wind
  - MidAmerican fulfilling with wind and some biogas
- MI – 10% +1,100MW by 2015 – enacted 2008
- IN – none
- ND – 10% by 2015 (voluntary) – enacted 2007

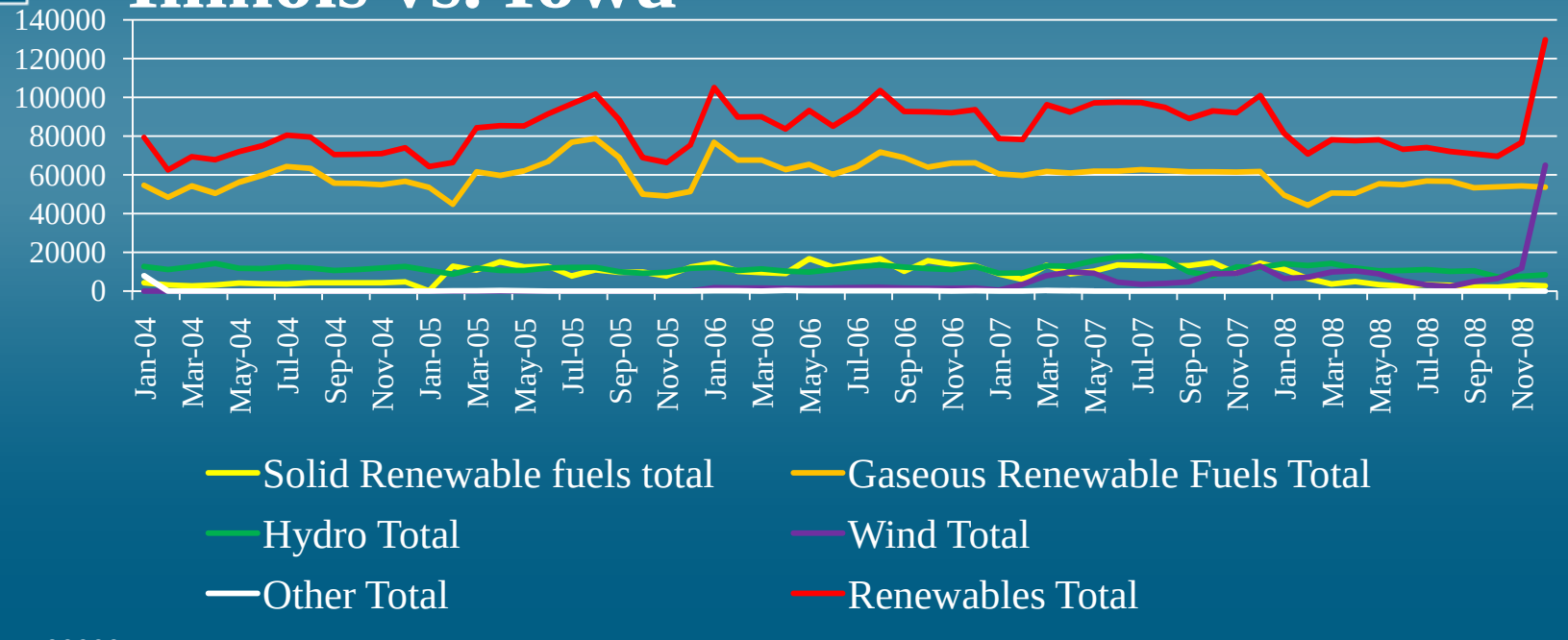
Illinois vs. Indiana

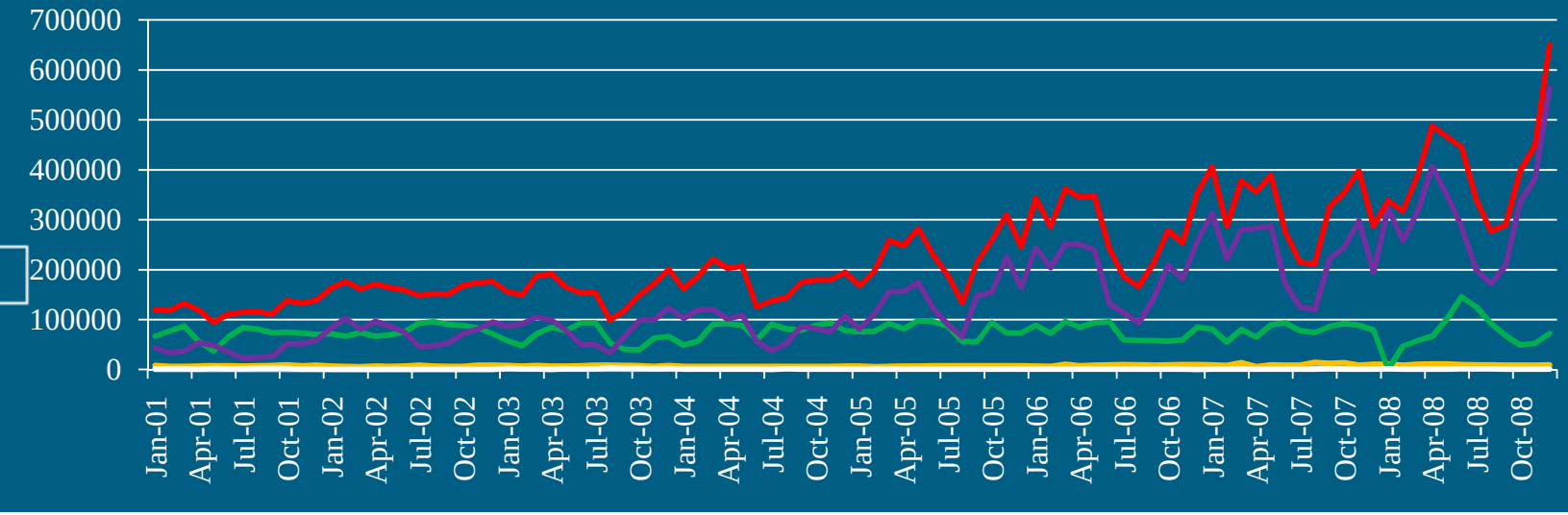


Illinois vs. North Dakota

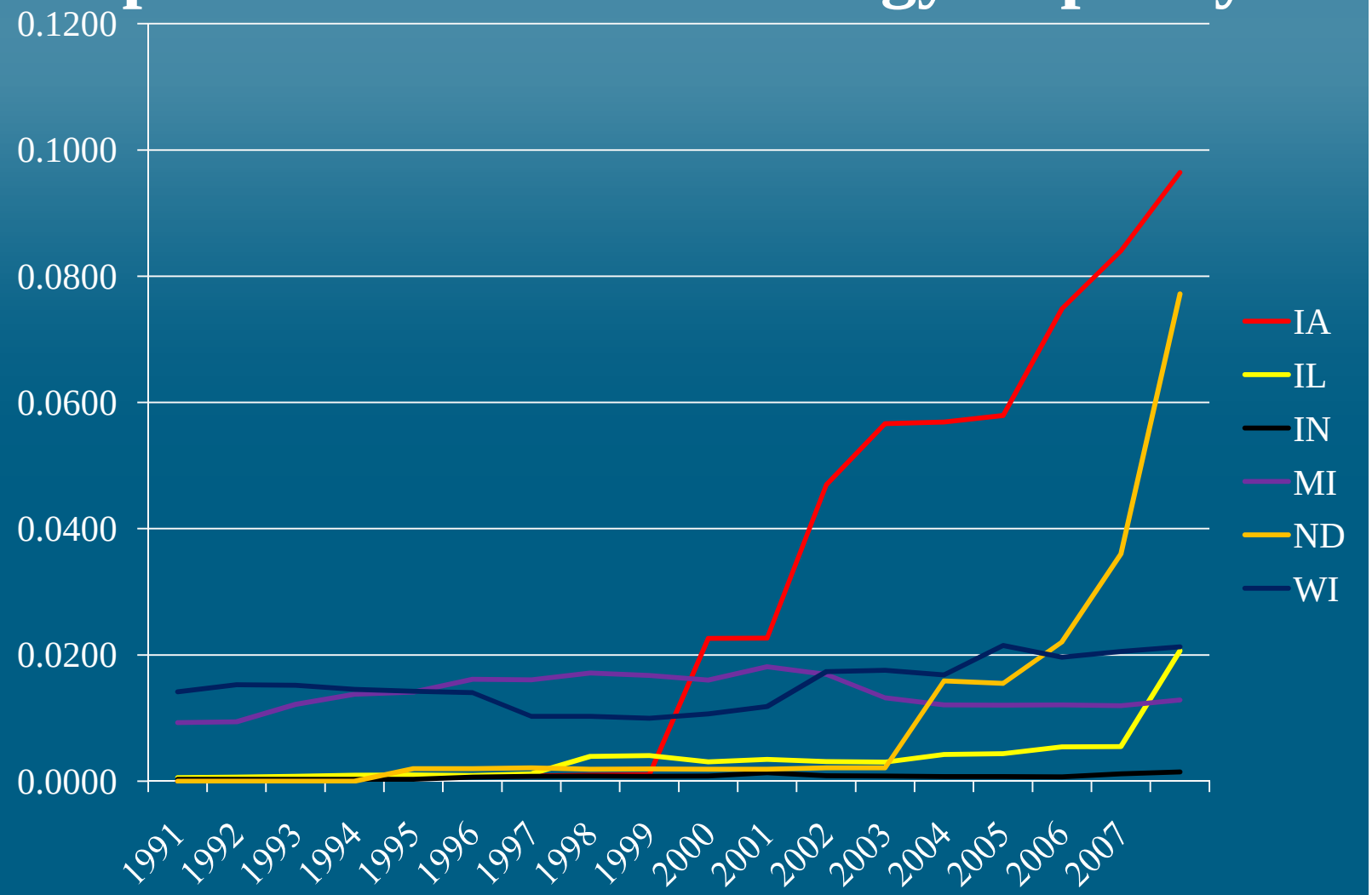


Illinois vs. Iowa

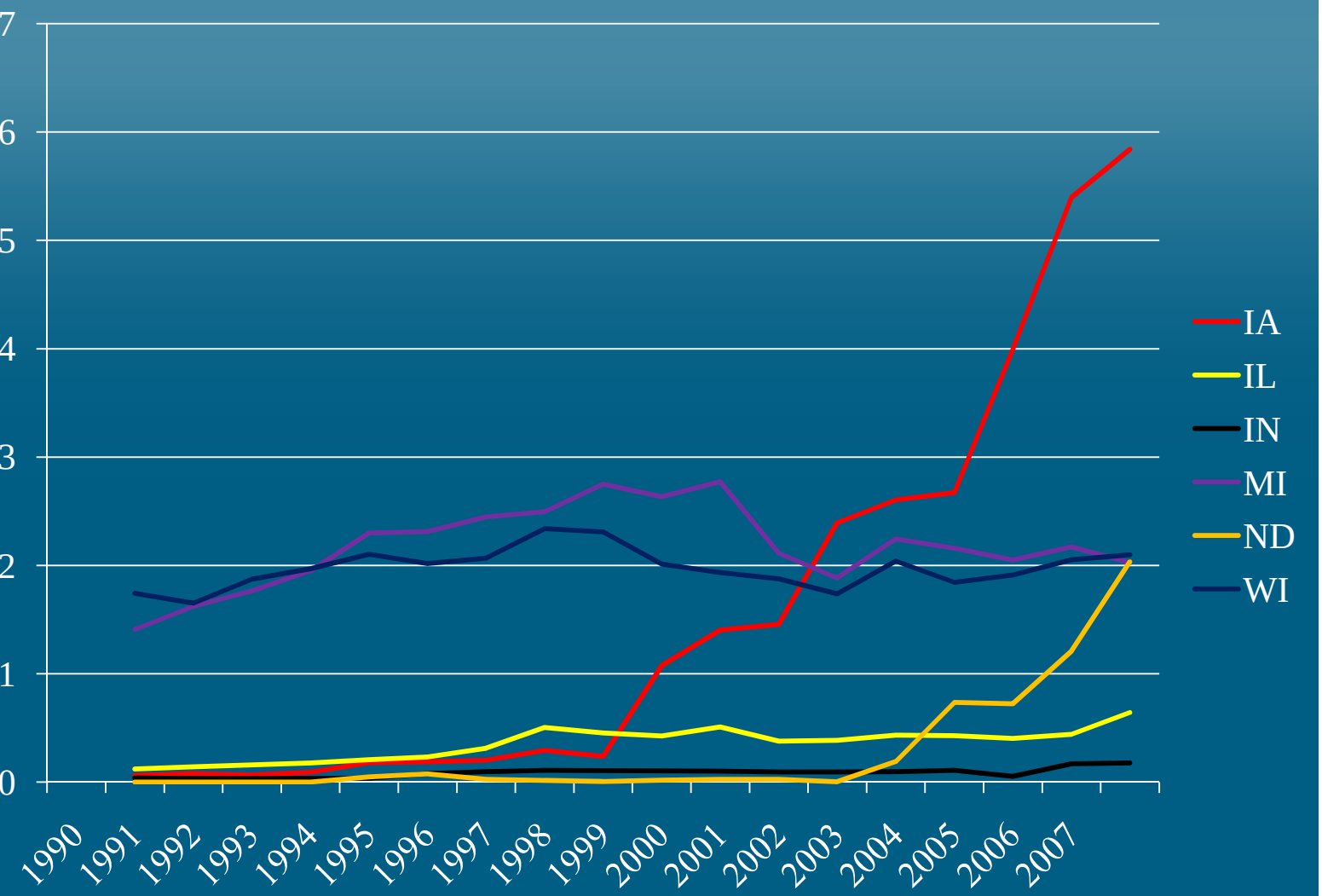




Proportion Renewable Energy Capacity



Proportion Renewable Energy Generation



Conclusions and Policy Recommendations

- Be careful what is counted as a renewable resource.

- In Illinois, landfill gas, a questionable renewable resource, was included and has fulfilled some of the early RPS requirements. Landfill gas has not grown much, suggesting that those firms are getting paid more to generate electricity they were already producing.

Conclusions and Policy Recommendations

- Illinois RPS has not affected emissions.
- A gradual increasing standard is more common.
- Don’t expect quick results from RPS requirements in terms of job growth and emissions reductions. They take a long time to appear.

Conclusions and Policy Recommendations

- Uncertain whether renewable growth would occur without a standard.
- Financing for wind was difficult without the RPS. The standard encouraged the growth of wind energy, by allowing developers to secure better finances.
- Even though wind is one of the lowest cost, large scale renewable resources in Illinois, the 75% mandate helped spur development in its infancy.
- In a similar fashion, solar is not feasible without a set-aside