

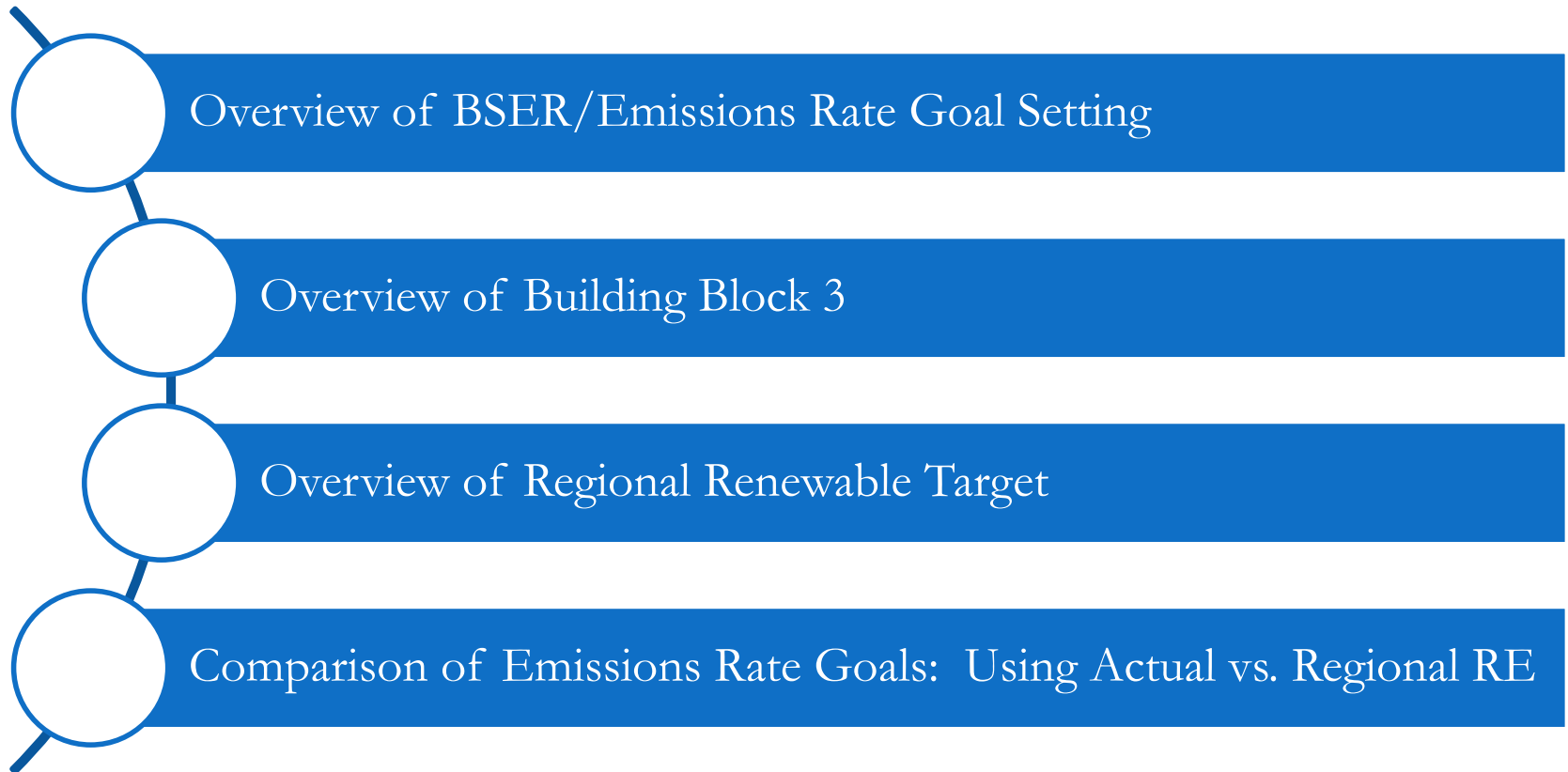
THE CLEAN POWER PLAN: CREDIT FOR IOWA'S EARLY ACTION ON RENEWABLES

Iowa Environmental Council
Environmental Law & Policy Center

September 19, 2014



Presentation Overview



Establishing State Goals: Building Block Method

Building Block 1:

Increase Efficiency of Existing, Fossil –
Fuel Fired Power Plants
(6% Heat Rate Improvement)

Building Block 2:

Increase Use of Existing Lower-Emitting
Sources
(NGCC - 70% Capacity Factor)

Iowa's 2012 Emissions Rate: 1,552 lbs/MWh
2030 Emissions Rate Goal: 1,301 lbs/MWh

Building Block 3:


Increase Use of Low/Zero Emitting
Sources
(Regional RE Target of 15%)

Building Block 4:

Increase Demand-Side Energy Efficiency
Programs
(1.5% Annual Incremental Savings)

Building Block 3: Increase Use of Low/Zero Emitting Energy Generation

To establish state-specific carbon emission goals, the EPA set renewable energy generation targets.



Renewable Energy Targets were established based on states' regional performance and growth factors.

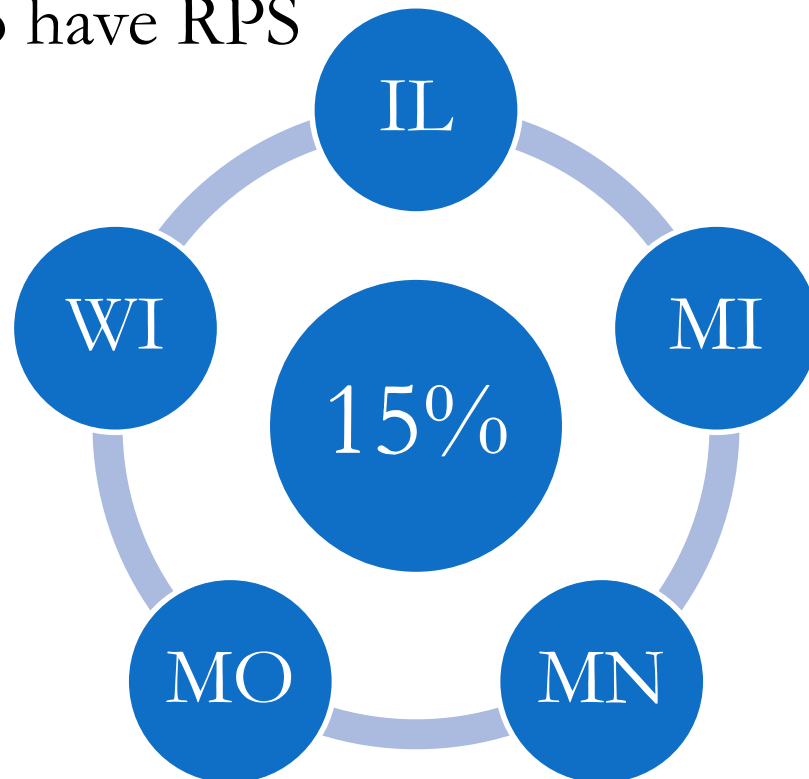


As part of the North-Central Region, Iowa's renewable energy target for 2030 is 15% of total generation

Proposed 111(d)
North Central
Region:

- Illinois
- Indiana
- Michigan
- Minnesota
- Missouri
- North Dakota
- South Dakota
- Wisconsin
- Iowa

- **North Central Regional Renewable Energy Target =**
Average of 2020 Renewable Portfolio Standards (RPS) from states in region who have RPS



State Renewable Portfolio Standards in NC Region

State	Renewable Portfolio Standard	Percentage (%) in 2020
Illinois	25% by 2025	16
Indiana	none	-
Iowa	surpassed	-
Michigan	10% by 2015	10
Minnesota	30% by 2020	30
Missouri	15% by 2021	10
North Dakota	none	-
South Dakota	none	-
Wisconsin	10% by 2015	10

Regional Average for Building Block 3:

$$16 + 10 + 30 + 10 + 10 / 5 = 15\%$$

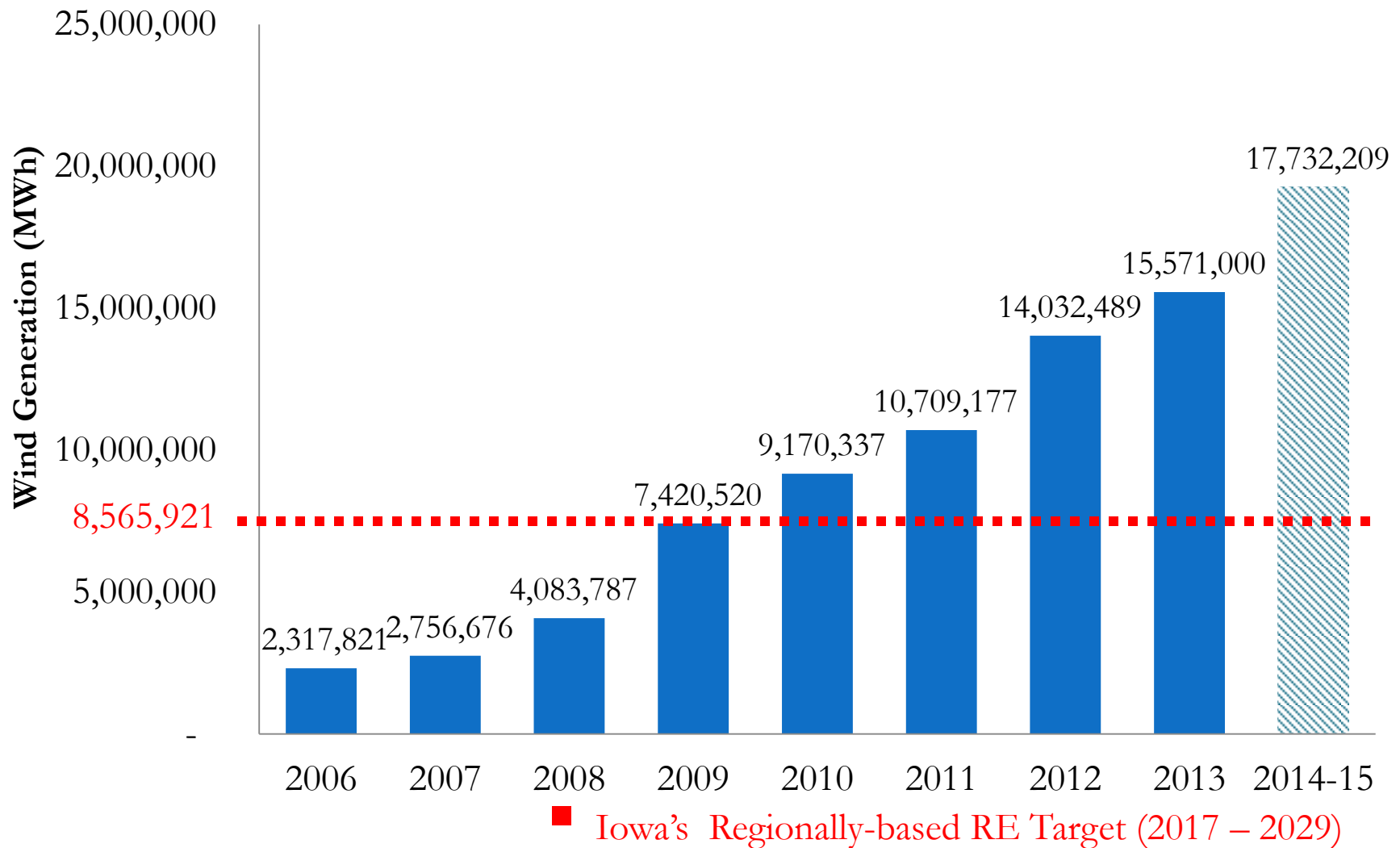
IOWA'S RENEWABLE TARGET

Applying the Regional Renewable Energy Target to Iowa

Calculating Iowa's RE Target for 2030

- To calculate Iowa's renewable generation target for 2030, the EPA multiplied the state's total in-state generation in 2012 by the North Central Region's Renewable Generation Target:
- **Total in-state generation in Iowa in 2012 (unadjusted) = 56,675,403.92 MWh**
- **NC Regional Renewable Generation Target = 15.114%**
- **Iowa's 2020-2030 Renewable Energy Generation Goal (56,675,403.92 x 15.114%) = 8,565,921 MWh**

Regional Approach Gives Iowa Credit for Early Action



COMPARING EMISSIONS GOALS

Calculating Iowa's Emission's Rate Goal Using **Regional Renewable Energy Targets**

EPA's Emissions Rate Goal Formula

- **EPA's Emissions Rate Goal Formula: =**

$$[(\text{Hist. Coal Gen.} \times \text{Coal Emission Rate}) + (\text{Hist. NGCC Gen.} \times \text{NGCC Emission Rate}) + (\text{Hist. O/G Gen.} \times \text{O/G Emission Rate}) + (\text{"Other" Gen.} \times \text{Other Emission Rate})]$$

$$\text{Coal gen.} + \text{NGCC Gen.} + \text{O/G Gen.} + \text{"Other" Gen.} + \text{Nuclear Gen.} + \text{Renewable Gen. (2012 Actual Gen.} \times \text{15\%)} + \text{Energy Eff. Gen.}$$

Iowa's 2030 Emissions Rate Goal

$$[(26,779,114 \times 2116) + (7,771,468 \times 894) + (247,181 \times 2,422) + (0 \times 0)]$$

$$26,779,114 + 7,771,468 + 247,181 + 0 + 277,784 + 8,565,921 + 5,729,927.58$$

Iowa's Emissions Rate Goal for 2030
= 1,301 lbs/MWh

COMPARING EMISSIONS GOALS

Calculating Iowa's Emissions Rate Goal using **actual, 2012**
renewable energy generation

Emissions Rate Goal Formula - Actual RE

- **EPA's Emissions Rate Goal Formula: =**

$$[(\text{Hist. Coal Gen.} \times \text{Coal Emission Rate}) + (\text{Hist. NGCC Gen.} \times \text{NGCC Emission Rate}) + (\text{Hist. O/G Gen.} \times \text{O/G Emission Rate}) + (\text{"Other" Gen.} \times \text{Other Emission Rate})]$$

$$\text{Coal gen.} + \text{NGCC Gen.} + \text{O/G Gen.} + \text{"Other" Gen.} + \text{Nuclear Gen.} + \text{2012 Actual Renewable Generation} + \text{Energy Eff. Gen.}$$

Iowa's Emissions Rate Goal – Actual RE

$$[(26,779,114 \times 2116) + (7,771,468 \times 894) + (247,181 \times 2,422) + (0 \times 0)]$$

$$26,779,114 + 7,771,468 + 247,181 + 0 + 277,784 + \mathbf{14,183,424} + 5,729,927.58$$

Iowa's Emissions Rate Goal for 2030
= 1,168 lbs/MWh

Comparing Iowa's Emission Rate Goal

Using Average, 2020 Renewable
Portfolio Standards (RPS) from 5
North Central States

1,301 lbs/MWh

16%

reduction from
Baseline 1,552 lbs/MWh

Using Actual, 2012 Renewable
Generation in Iowa

1,168 lbs/MWh

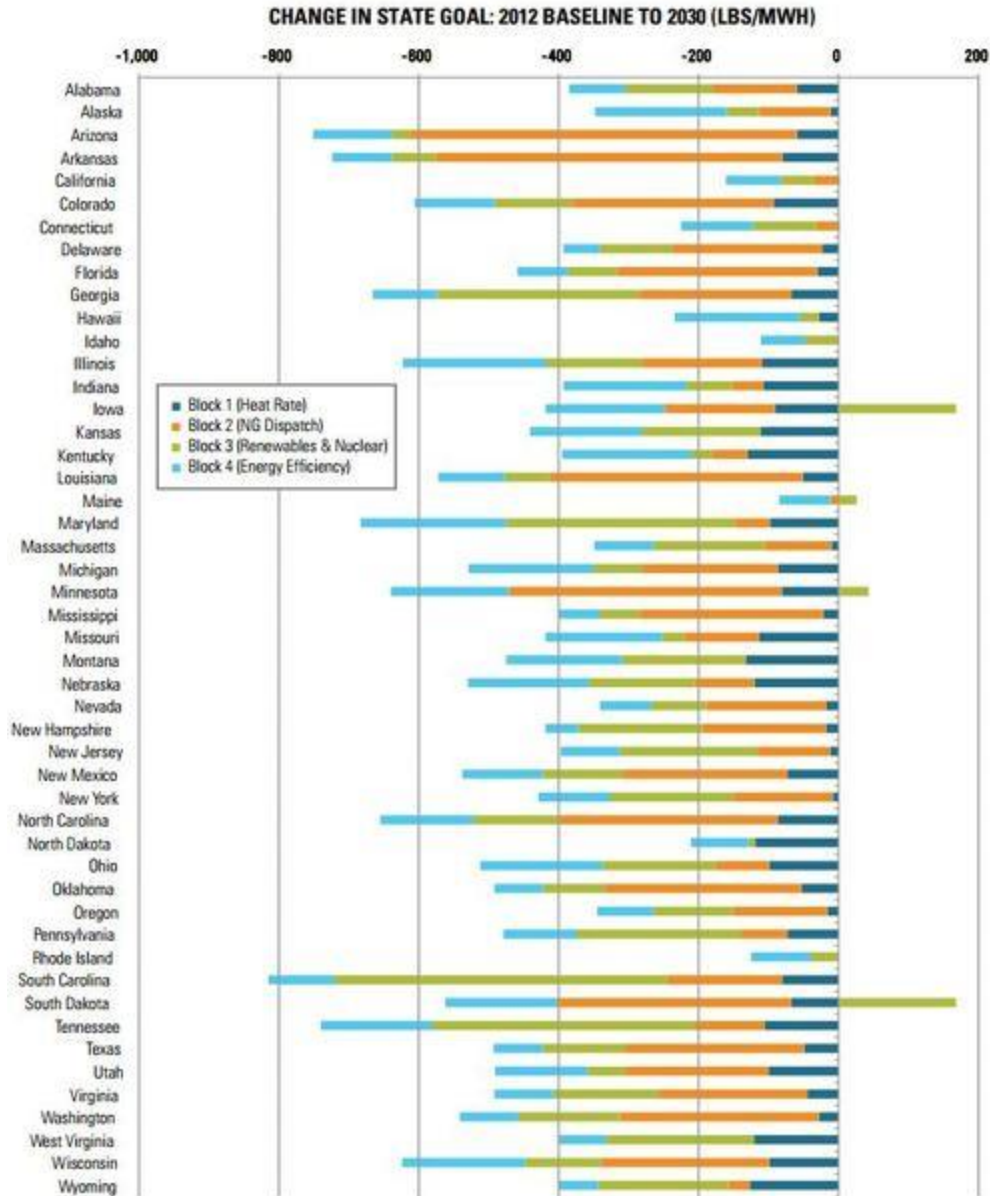
25%

reduction from
Baseline 1,552 lbs/MWh

Iowa's early action on renewables gives Iowa credit:

Iowa is 1 of 4 states where Building Block 3 calls for less renewable generation than what is actually installed.

Iowa's emissions rate goal is the **5th lowest percent change** in the U.S.



Source for Table: Natural Resources Defense Council

Regional Approach Gives Iowa Credit for Early Action

