

EPA 111(D) PROPOSAL REGULATING GHGS

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MDEQ

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BACKGROUND

- ▣ Supreme Court Decision – EPA has the authority to regulate GHGs
- ▣ EPA regulated GHG emissions from autos
- ▣ EPA proposed 111(b) regulation of new power plants (NSPS)
- ▣ 111(b) proposal triggers 111(d) for GHGs

OVERVIEW OF EPA PROPOSAL

- ▣ State Goals: Building Blocks
- ▣ Alternative Blocks Available
- ▣ Planning for 111(d) and Timeline
- ▣ Plan Requirements
- ▣ Questions

Four Building Blocks

- ▣ Block One – Heat Rate Improvement, 6%
- ▣ Block Two – Natural Gas Combined Cycle, 70% utilization and dispatch
- ▣ Block Three – Renewable Energy, Regionally 15% in 2012
 - Alternatives
 - ▣ State assessment of technical and market potential
 - Quantify each technology
 - Market potential for each of the technologies
 - ▣ Nuclear capacity increase
- ▣ Block Four – Demand Side Energy Efficiency

Building Block 1 in Michigan

PROPOSAL

Heat Rate Improvements at
Coal Plants

6% through both O&M and
plant upgrades

EPA ESTIMATED EFFECT

About 53 TWh of Coal
(2012) from 2,255 to 2,120
lbs/MW

Building Block 2 in Michigan

PROPOSAL

Increased Utilization of Existing Natural Gas Plants

Dial up existing Natural Gas Combined Cycle to 70% capacity factor

EPA ESTIMATED EFFECT

From 19 TWh Natural Gas Combined Cycle increased to 31 TWh

1,511 lbs/GWh

Building Block 3 in Michigan

PROPOSAL

Zero or low carbon substitution of power from more carbon intensive EGUs

6% at risk nuclear and Renewable Energy at 7.4% (assumes a 6% growth rate)

EPA ESTIMATED EFFECT

1,139 lbs/MWh

Building Block 4 in Michigan

PROPOSAL

Relies on Energy
Optimization by assuming a
reduction in demand for
electricity at 11.77%

EPA ESTIMATED EFFECT

1,161 lbs/GWh

Alternative Blocks

- ▣ Fuel Switching at Individual Units
- ▣ Carbon Capture and Sequestration
- ▣ New Natural Gas Combined Cycle
- ▣ Assessment of Heat Rate Improvement at other than coal-fired units
- ▣ Co-firing lower carbon fuels (biofuels)
- ▣ Combined Heat and Power
- ▣ Distributed Generation
- ▣ Retirements

Timeline for 111(d)

**June
2014**
Draft
rule
issued

June 2015
Rule
finalized

June 2017
State plan
due (with 1
year
extension)

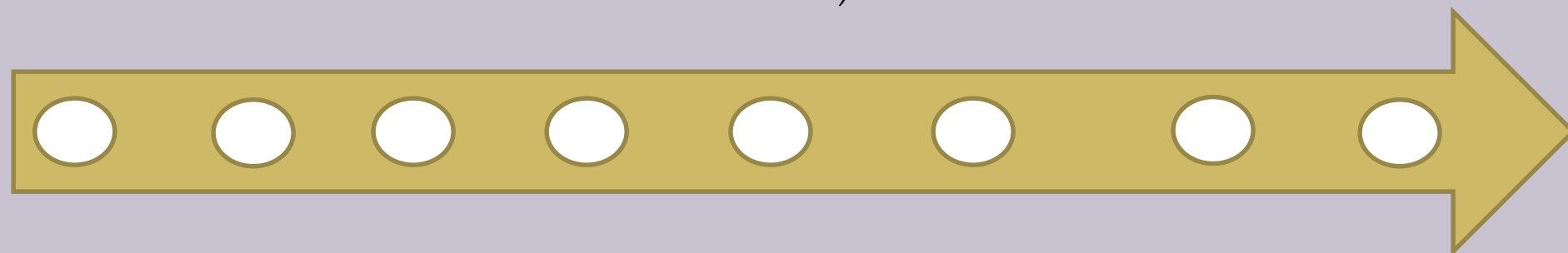
**January
2020-29**
Interim
goal in
effect

**December
1, 2014**
Deadline
for
comments
to EPA

**June
2016**
State
plan
due

June 2018
Multi-state
plans due
(with 1
year
extension)

**January 2030
onwards**
Proposed goal
in effect



RATE vs. Mass

- ▣ EPA Goals are proposed as a rate-based, lbs of CO₂/GWh
- ▣ Conversion to a mass-rate, lbs of CO₂/yr, is not straight forward and EPA guidance is lacking
- ▣ Uncertainty on how to make future adjustments with mass-rate approach

State Plan Development

- ▣ Goals in the Blocks can shift to accommodate the State plan
- ▣ “Remaining useful life” of units should be considered.
- ▣ Rate-based or Mass-based
- ▣ Direct or Portfolio Approach
 - Direct means limits apply to individual EGUs
 - Portfolio means enforceable obligations on a 3rd party other than the owner/operator of the EGU

State Plan Requirements

- ▣ Enforceable measures to reduce CO₂
- ▣ Projected CO₂ reduction or equivalent actions to meet EPA established goals
- ▣ Quantifiable and verifiable emission reductions
- ▣ Reporting process on implementation progress toward goals and implementation of corrective actions, if necessary

QUESTIONS?