Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

June 16, 2014

Submitted to the docket electronically

Attention: Docket ID No. EPA–HQ–OAR–2013–0809
U.S. Environmental Protection Agency (EPA)

The Iowa Department of Natural Resources (Iowa DNR) respectfully submits the following comments pursuant to EPA's "Notice of Availability of the Environmental Protection Agency's 2018 Emissions Modeling Platform" published in the *Federal Register* (FR) on January 14, 2014 (79 FR 2437).

General Comments

The Iowa DNR appreciates the outreach and comment solicitation efforts undertaken by EPA to improve EPA's 2018 emissions modeling platform. Iowa DNR encourages EPA to continue to seek stakeholder feedback on any future development of emissions and modeling platforms well in advance of their intended use in regulatory applications. Early opportunities for comment, whether informal or through publication in the Federal Register, are welcomed, appreciated, and an important component for data improvement. The technical review process is typically time consuming and data intensive. The Iowa DNR values the nearly five and one-half months provided by EPA in the January 14, 2014, Notice of Data Availably (NODA) to submit comments. Such timeframes enable us to conduct a more thorough and inclusive review while striving to balance limited resources with competing priorities.

Comments on Power Sector Forecast Input Data

During an informal review and comment period offered by EPA the Iowa DNR submitted corrections, updates, and improvements on the draft (version 5.13 5-6-2013) National Electric Energy Data System (NEEDS) database. Since the NEEDS database supplies many essential electrical generating unit (EGU) parameters to the Integrated Planning Model (IPM), the NEEDS database must be as accurate as possible if IPM is to provide a useful forecast of power sector emissions and electricity generation.

The Iowa DNR worked closely with our EGUs and returned to EPA on May 30, 2013, a revised version of the NEEDS database which incorporated the most recent and accurate information available to the Iowa DNR. However, EPA did not accept all of the improvements supplied by the state so those same faults were transitioned into the IPM output.[1] This result is regrettable and unnecessarily requires a duplication of effort to correct those same errors now present in the IPM[2] results.

[1] For example, a simple review of the IPM results reveals EPA rejected the planned retirement of all units at the CIPCO Fair Station facility. The revised NEEDS database Iowa DNR supplied to EPA included a 2013 retirement date for all the units at this facility, but the IPM forecast has one of its units continuing to operate in 2018 despite the fact that the facility permanently shutdown in 2013.

[2] EPA's 2018 Base Case version 5-13 IPM results, see specifically: ftp://ftp.epa.gov/EmisInventory/2011v6/v1platform/2018emissions/power_sector_modeling/Web-Ready_Parsed_File_EPA5-13_Base_Case_2018.xlsx

In future NEEDS reviews if EPA envisions selectively accepting state/stakeholder updates, EPA is urged to clearly communicate the criteria by which updates would either be accepted or rejected. The criteria for acceptance should be explained at the beginning of the review process and not after the state has supplied the information to EPA. Through clear communication and explanation of EPA's expectations states and stakeholders are better positioned to provide meaningful updates to the NEEDS database.

Comments on the IPM Power Sector Forecast

The Iowa DNR believes there are significant miscalculations in IPM's predictions for electricity generation and emissions in 2018. Since the NEEDS database was last updated (and apart from the above concerns) new information regarding EGU growth, controls, fuel conversions, and MATS compliance plans has become available. This new information involves a mix of federally enforceable permitting actions, facility announcements, and best available data.

A summary of our most significant concerns on the IPM (Basecase 5-13) forecast includes incorrect predictions that certain EGUs will:

- continue operating units that have already shutdown,
- retire units (with a combined summertime net capacity of ~1,646 MW as reported by IPM) that currently have no plans to shut down and instead are expected to utilize controls or burn natural gas to comply with existing air quality regulations,
- install mercury controls on units converting to (or permitted to fire only on) natural gas, and
- rely on existing sources despite plans for new wind, hydroelectric, and combined-cycle generation with a nominal capacity over 1,600 MW.

A detailed set of comments that pertain specifically to the IPM unit-level parsed results are included in the attached spreadsheet "*IPM-Web-Ready_Parsed_File_EPA5-13_Base_Case_2018_ IowaDNRreview.xlsx*" The information in column A provides a simple description of the comment while the data in column B provides a more detailed assessment of the IPM forecast for the given unit.[3]

Several of our detailed comments can be addressed by updating the NEEDS database (preferably using a process consistent with the comments above) and producing new IPM results. Other comments, such as IPM's unexplained retirement of larger coal fired units currently installing controls, may be indicative of weaknesses inherent within the IPM platform. Iowa DNR has identified comments and corrections that justify generating a new forecast for the EGU sector. At a minimum, Iowa DNR hopes EPA undertakes efforts to revise the 2018 EGU emissions forecasts.

Considering the importance of the EGU forecasts, the complexity of the task, and the inherent uncertainty, it also appropriate for EPA to consider alternative means of forecasting emissions changes in the EGU sector that do not rely upon the use of IPM. A second source of EGU emissions forecasts would provide a new means to compare and evaluate future EGU emissions forecasts, and at a minimum could be useful from a weight-of-evidence perspective.

[3] The comments generally focus on larger existing units or new units to manage the scope of the review.

Comments on Agricultural Burning (Nonpoint) Emissions

The Iowa DNR requests that EPA use the 2011 agricultural burning emissions submitted by Iowa DNR to EPA via EIS on February 25, 2014, for the 2018 Emissions Modeling Platform. The emissions currently in the 2018 Emissions Modeling Platform are the same as those in 2011 NEI version 1, and are significantly over-estimated.

Iowa DNR's justification for using the revised agricultural burning figures is explained in detail in the Iowa DNR's March 1, 2014, comment letter on the 2011 Emissions Modeling Platform (ID EPA-HQ-OAR-2013-0743-0017). To summarize, agricultural fields (corn, soybeans, etc.) in Iowa are not burned (or are so rarely burned that it can be disregarded) as part of the crop production and management process. This differs from other crops grown in other states, such as sugar cane or rice, where burning may yield real or perceived agricultural benefits. The revised emissions are shown in Table 1 below.

Table 1. 2011 Agricultural Burning Emissions (tons per year)

Data Set	$PM_{2.5}$-PRI	PM_{10}-PRI	SO_2	NO_x	VOC	CO	HAP
EPA – NEI v.1 [a]	13,064.76	24,029.25	3,190.20	6,301.73	10,354.60	137,310.00	-
Iowa DNR – NEI v.2 [b]	0.58	1.07	0.14	0.28	0.46	6.11	0.34

[a] Emission rates are the same in the 2011 and 2018 EPA NEI v.1 Emissions Modeling Platforms

[b] Iowa DNR recommends that EPA use these emissions rates in the next version of the 2011/2018 NEI

Please note that since the only agricultural burning reported was in corn fields, the Iowa DNR reported the emissions under source classification code (SCC) 2801500150, which is specifically for corn, instead of 280150000, which is for general emissions. There should be zero emissions for Iowa under SCC 280150000 in the NEI version 2, 2011 Emissions Modeling Platform, and the 2018 Emissions Modeling Platform.

Comments on Ethanol Transport Vapor Emissions

The Iowa DNR is concerned that EPA's projected 2018 VOC emissions from ethanol transport vapor[4] are significantly higher than the 2011 VOC emissions reported by Iowa DNR in the 2011 NEI. The differences in emissions are shown in Table 2.

Table 2. Ethanol Transport Vapor Emissions

SCC	VOC Emissions (tons per year)	
	Iowa DNR – 2011 Emissions NEI v. 1 [a]	EPA 2018 Emissions Modeling Platform
30205031 (Working Loss)	4.40	403.85
30205052 (Truck Loadout)	19.45	435.21
30205053 (Rail Loadout)	101.25	2,841.75
Other SCCs	107.81	-
Total	**233.68**	**3,680.81**

[a] Values do not include emissions from non-ethanol facilities that may have reported using SCCs 30205031, 30205052, and 30205053.

[4] From EPA file "*IA_Ethanol_transport_vapor_2018rg_ref_04dec2013_v2.csv*" downloaded from ftp://ftp.epa.gov/EmisInventory/2011v6/v1platform/2018emissions/nonpoint_by_state/IA_nonpoint_2018.zip.

It does not appear that the calculation method used by EPA[5], which is based on projected gallons of production, accounts for VOC controls on the loading racks at Iowa ethanol plants. Nearly all Iowa ethanol loading racks are controlled by flares that control up to 98% of VOC emissions. Iowa DNR encourages EPA to base its 2018 projections for ethanol transport vapor on Iowa DNR's 2011 emissions values. To help support our position Iowa DNR is submitting with this comment letter the spreadsheet "*2018_Iowa_Ethanol_Vapor_Transport_Emissions_Comments.xlxs*" that provides a detailed comparison of Iowa DNR's 2011 data and EPA's 2018 emissions projections. The spreadsheet also identifies which Iowa loading racks are controlled.

EPA has also added 2018 emissions for several counties where there is no corresponding VOC value in Iowa's 2011 NEI submittal. This results in several issues:

- EPA may be double-counting VOC emissions from ethanol transport vapor for counties where Iowa DNR may have reported the VOC emissions under a different SCC such as 30205041, 30200912, 30190023, et cetera instead of the SCCs used by EPA – 30205052, 30205053, and 30205031.
- Many Iowa ethanol facilities vent the emissions from the rail loading rack and truck loading rack to one combined stack with a flare. Therefore, the rail loadout and truck loadout emissions may have been combined and reported under only one of the SCCs mentioned above.
- EPA has added emissions in some counties where no ethanol plant exists.

These issues are also noted on the attached ethanol spreadsheet. Iowa DNR will be happy to work with EPA to resolve these issues. Please direct any questions to Marnie Stein of my staff at 515-725-9555 or Marnie.Stein@dnr.iowa.gov.

Comments on Cellulosic Ethanol Emissions

Iowa will be adding approximately 57 million gallons of cellulosic ethanol capacity over the next year as three cellulosic facilities begin production. They were not included in the EPA file titled "*IA_2018_cellulosic_inventory_02may2013_v0.csv.*"[6] EPA may wish to project 2018 emissions from these three facilities and add them to the 2018 emissions modeling platform. The three cellulosic facilities are listed in Table 3 below.

Table 3. Iowa Cellulosic Ethanol Plants

FIPS	Name	Approximate Production Capacity (million gallons/year)
19169	DuPont Cellulosic Ethanol	30
19147	POET-DSM Project Liberty	25
19093	Quad County Corn Processors' Adding Cellulosic Ethanol (ACE)	2

Point Source Facilities with Consent Decrees

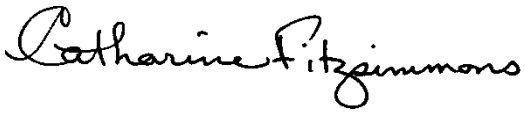
The Iowa DNR would appreciate an opportunity to work with EPA directly to ensure that significant emissions reductions required by Consent Orders that will affect Grain Processing Corporation (GPC)[7]

[5] EPA's 2011 and 2018 Emissions Modeling Platform Draft Technical Support Document (2/26/14).
[6] ftp://ftp.epa.gov/EmisInventory/2011v6/v1platform/2018emissions/nonpoint_by_state/IA_nonpoint_2018.zip
[7] GPC is located along the eastern border of Iowa in the city of Muscatine, its facility ID is 70-01-004.

are included in the revised 2018 emissions modeling platform. Controls and operational changes required by these Consent Orders will reduce emissions of direct $PM_{2.5}$ by an estimated 367.9 tons per year and reduce SO_2 emissions by more than 11,000 tons per year before 2018. Reductions in NOx and VOC will also occur at units required to install low NOx burners and regenerative thermal oxidizers, respectively. The 2018 emissions inventory would benefit by incorporating these enforceable emissions reductions.

Iowa DNR appreciates the opportunity to comment on this NODA. Unless otherwise noted, please contact Matthew Johnson from my staff at (515) 725-9554 or matthew.johnson@dnr.iowa.gov for any questions or additional information needed.

Sincerely,



Catharine Fitzsimmons
Chief, Air Quality Bureau
Iowa Department of Natural Resources