

STRICKEN BY THE BOARD, 11/7/13

Therriault, John

From: Ted Tiberi <ttiberi@aridtech.com>
Sent: Wednesday, November 06, 2013 11:05 AM
To: McGill, Richard
Cc: Therriault, John
Subject: Metea Valley High School
Attachments: State of Illinois Refueling Emissions.ppt

Dear Mr. McGill,

I realize the comment period has ended for R13-18 related to Stage II and ORVR vapor recovery.

However, I just wanted to inform you that earlier today, in response to an invitation, I made a presentation to an Honor's Group of Science students at Metea Valley High School, in Aurora, Illinois.

During my talk, the Science teacher asked a group of about 50 students in attendance how many drive cars with model years before 1998 (pre-ORVR); I was surprised to learn the answer; 50%. As I progressed with my presentation, showing the vapors generated in Quadrant "D"; no Stage II and no ORVR; the students were shocked to learn that if IL EPA removes Stage II vapor recovery controls, they would be subjected to toxic emissions which they would otherwise not be exposed to. In fact, after being educated on this issue, the students felt so strongly about these toxic vapor exposures that they intend to write letters to IL EPA, IL Pollution Control Board, and possibly their local elected officials to ask for further explanation and justification on IL EPA's proposed actions to remove Stage II vapor recovery controls.

I have attached a portion of the slides presented during my talk to these inquisitive high school Science students; where I show how the Refueling emissions increase are derived for the State of Illinois. These incremental emissions do not even consider the additional excess emissions from the storage tank; in a non-Stage II, non-Processor environment.

In the event that you receive any letters at IL Pollution Control Board, you will know the origin.

For the Public Meeting scheduled for tomorrow in Chicago, can you please advise if the full agenda is available on-line as of today? Also, is the letter drafted by yourself and Mr. O'Leary now available for review on R13-18?

Please advise.

All the Best, Ted

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Refueling Emissions

Vehicle

ORVR

No ORVR

Stage II

A

B

Gas Station

No Stage II

C

D

ARID Technologies, Inc. 2013

Illinois Data

- Annual Fuel Consumption
 - 4,718,577,164 gallons (2011 data)
- ORVR Refueling Percentage
 - Assume 84.87% of gasoline to ORVR vehicles
- Stage II Vapor Recovery Efficiency
 - Assume 75%
- ORVR Vapor Recovery Efficiency
 - Assume 98%
- Uncontrolled Emission Factor
 - Assume 8.4 lb/1,000 gallons dispensed

Calculate Refueling Emissions

A: Stage II + ORVR

$$\begin{aligned} \text{Emissions} &= \text{EF} \times (\text{ORVR \%}) \times (1 - \text{orvr eff}) \times (1 - \text{stage II eff}) \\ &= 8.4 (.85) (1 - 0.98) (1 - 0.75) = .0357 \text{ lb/1,000 gal} \end{aligned}$$

B: Stage II and No ORVR

$$\begin{aligned} \text{Emissions} &= \text{EF} \times (1 - \text{ORVR \%}) \times (1 - \text{stage II eff}) \\ &= 8.4 (1 - .85) (1 - .75) = .315 \text{ lb/1,000 gal} \end{aligned}$$

C: No Stage II + ORVR

$$\begin{aligned} \text{Emissions} &= \text{EF} \times (\text{ORVR \%}) \times (1 - \text{orvr eff}) \\ &= 8.4 (.85) (1 - 0.98) = 0.1428 \text{ lb/1,000 gal} \end{aligned}$$

D: No Stage II and No ORVR

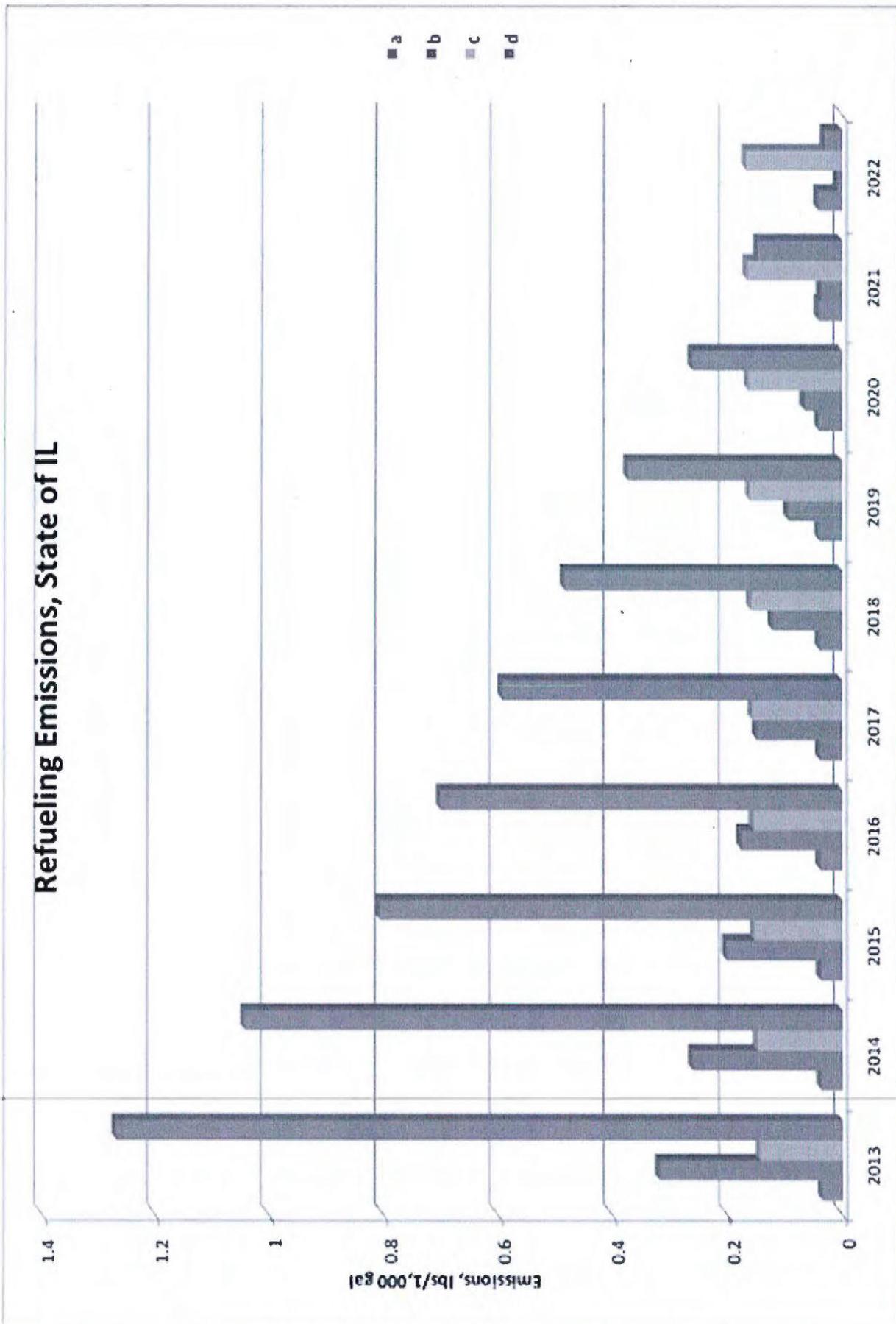
$$\begin{aligned} \text{Emissions} &= \text{EF} \times (1 - \text{ORVR \%}) \\ &= 8.4 (1 - .85) = 1.26 \text{ lb/1,000 gal} \end{aligned}$$

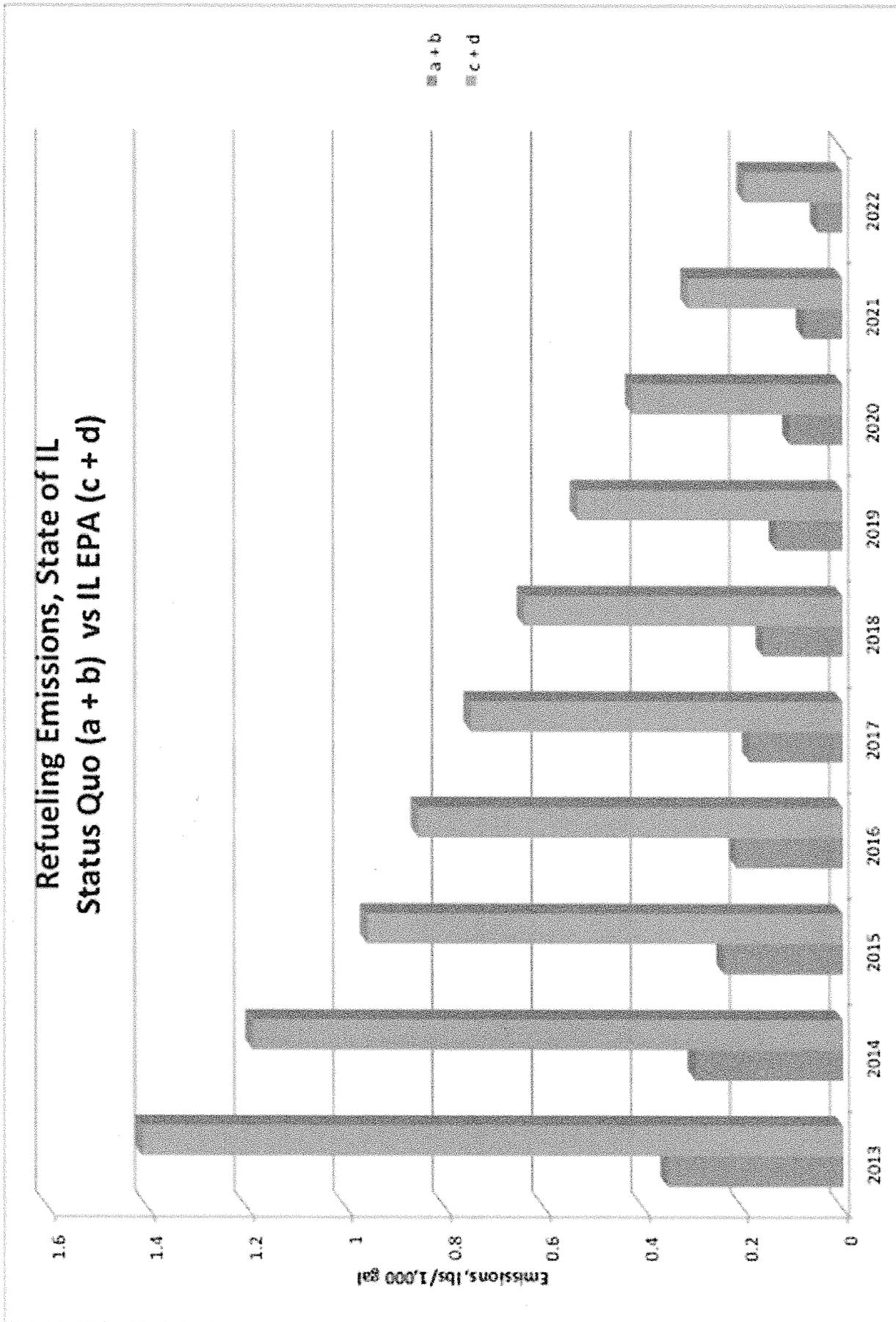
Sum the Scenarios

- $A + B = \text{Status Quo}$
 $= .0357 + 0.315 = 0.3507 \text{ lb/1,000 gal}$
- $C + D = \text{IL EPA Proposal to Remove Stage II}$
 $= .1428 + 1.26 = 1.4028 \text{ lb/1,000 gal}$

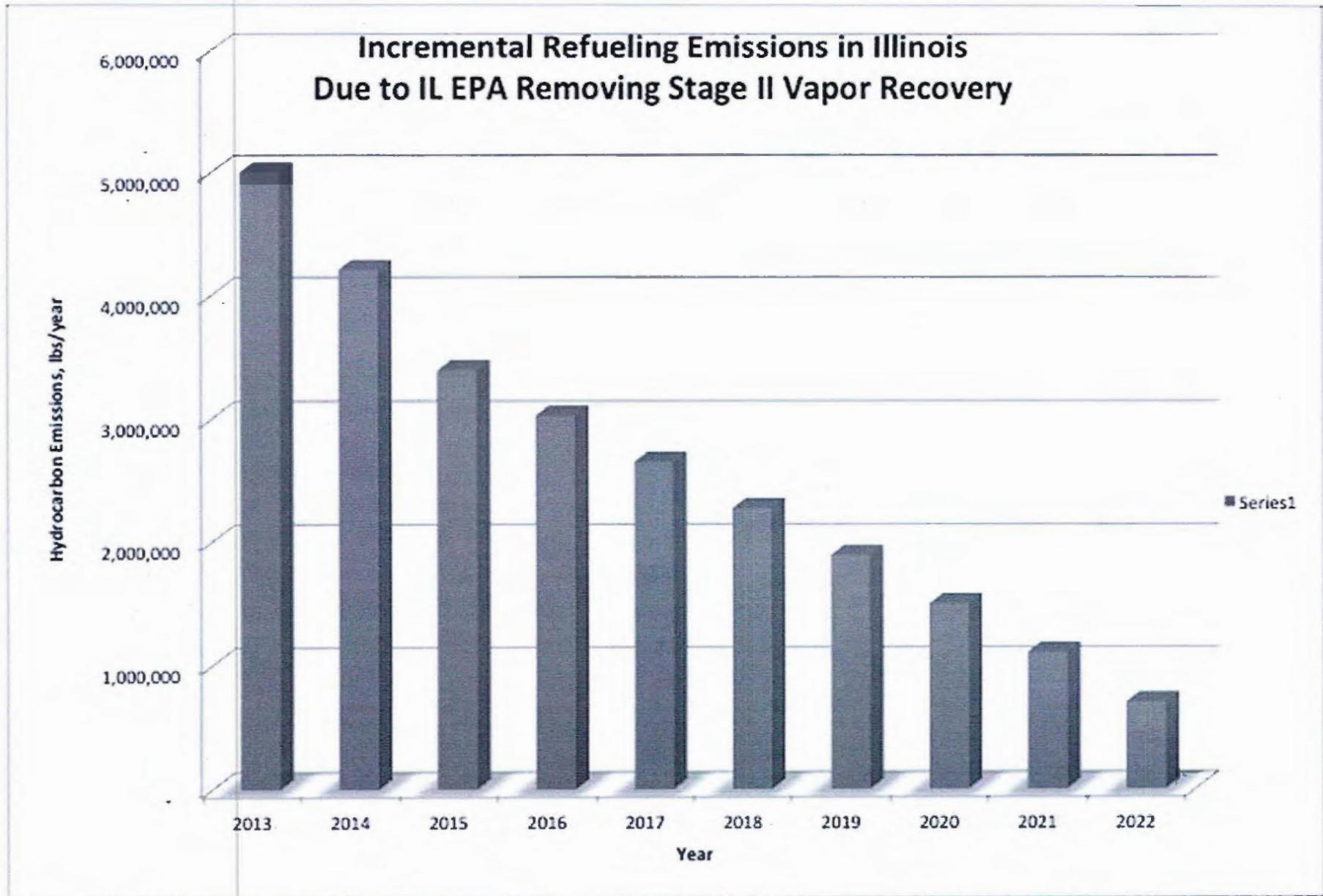
Future Years

- Increment the ORVR % and calculate each year from 2013 to 2022
- Plot emissions for individual years and then plot the cumulative losses over the entire interval
- What is impact on Refueling Emissions with the proposed removal of Stage II vapor recovery in Illinois ?





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Cumulative Refueling Emissions Increase in Illinois Due to IL EPA Action to Remove Stage II Vapor Recovery

