

Capping the Flame: Solving North Dakota's Natural Gas Flaring Problem Through Cap and Trade

Erin Thomas*

Imagine you are an astronaut on your first trip to space looking down in awe at the beautiful Earth below. You see the United States at night with the impressive view of glowing cities shining brightly against the dark night. As your eyes scan across the country you recognize several iconic cities; New York, Chicago, Minneapolis, and then something strange catches your eye as you move further west. It seems as though a brand new city, larger than Minneapolis, has developed in North Dakota. Your eyes are not deceiving you, and there is no new metropolis in the middle of the northwest. Those bright, shining lights you see are not a booming city. They are flares of natural gas burning in the sky, releasing enough energy to heat half a million homes a day,¹ throughout the day and night.

This Note will analyze the current flaring reduction regulations from the North Dakota Industrial Commission (“NDIC”) and argue that those existing rules should be amended to a cap and trade structure to efficiently and successfully reduce the amount of flaring in the Bakken region.

Part I will discuss the Bakken Shale Formation, North Dakota’s oil and natural gas industry, and information about the historic, scientific, technical, and economic background of flaring. Part II will discuss the legal background including the authority given to the NDIC, the original and recent regulations relating to natural gas flaring and the challenges and impacts of the associated gas flaring. Part III will analyze the current NDIC flaring regulations and their inadequacies. Part IV will suggest a cap and trade system as a solution to the flaring problem and explain how that compares to the current rules and regulations.

* Erin Thomas is a 2017 J.D. Candidate at The George Washington University Law School. She received her B.A. in Marketing from West Virginia University and is Senior Projects Editor of the George Washington Journal of Energy and Environmental Law (“JEEL”). She would like to thank JEEL and her family and friends for all of their support throughout the entire Note writing process.

1. *Gas Flaring as Seen From Space*, CERES, <http://www.ceres.org/industry-initiatives/oil-and-gas/gas-flares-from-space> (last visited Mar. 26, 2016).

I. Factual Background

This section will discuss the ins and outs of natural gas flaring and specifically within North Dakota. Section A will describe a brief background of the Bakken region, in which the Bakken formation and the oil and gas deposits reside, and examine statistics specific to the North Dakota oil and gas industry. Section B will delve into the specifics about what flaring is, and its technical and harmful aspects.

A. The North Dakota Oil and Gas Industry and the Bakken Formation

The Bakken Shale region is home to the Bakken Formation, which is one of the largest contiguous deposits of oil and natural gas in the United States.² The Bakken Formation expands under North Dakota, South Dakota, Montana, Manitoba, and Saskatchewan.³ The name of this region originates from a North Dakota farmer, Henry Bakken, who owned the land where the first well in the Bakken formation was found.⁴ The “Henry O. Bakken No. 1 Well” was first drilled on July 31, 1951, but the extent of the formation underneath was not discovered until the latter part of the 1970s.⁵

The oil and natural gas industry has made a large impact on North Dakota’s population and economy. By 2014, the population of North Dakota had reached an all-time high of 739,482 people,⁶ up 2.2% from the year prior. While having the highest employment gain in the United States of 1.72% from 2013 to 2014, in 2014 North Dakota had the nation’s

2. *What Is the Bakken Formation?*, GEOLOGY.COM, <http://geology.com/articles/bakken-formation.shtml> (last visited Jan. 17, 2016).

3. *BAKKEN SHALE*, NGI’s SHALE DAILY, <http://www.naturalgasintel.com/topics/105-bakken-shale> (last visited Mar. 25, 2016).

4. *Bakken News*, BAKKEN SHALE, <http://bakkenshale.com/> (last visited Mar. 25, 2016).

5. Monika Ehrman, *Lights Out in the Bakken: A Review and Analysis of Flaring Regulation and Its Potential Effect on North Dakota Shale Oil Production*, 117 W. VA. L. REV. 549, 555–56 (2014).

6. Emily Aasand, *ND Population Reaches All-Time High*, BAKKEN MAG., Dec. 31, 2014, <http://thebakken.com/articles/950/nd-population-reaches-all-time-high>.

lowest unemployment rate of 2.6%.⁷ The oil and gas industry of North Dakota contributes to the increase of the state's population, as the industry makes up 12% of the state's total employment.⁸ Therefore the oil and gas industry, due to the Bakken Shale Formation, has had a large impact on North Dakota and those impacts continue to grow.

Lately, North Dakota has been the focus of oil and gas production in the United States due to the large Bakken Shale oil field beneath it. Approximately 15,000 square miles underneath North Dakota, the Bakken formation is the largest oil field in North America.⁹ The oil production in the Bakken/Three Forks region from 2007 to 2013 has increased 40 fold, from 18,500 barrels per day to 760,000.¹⁰ The state's recent oil boom has increased its production to account for 11% of the total United States oil production.¹¹ That 11% of production has recently pushed North Dakota past Alaska to become the second largest oil producing state, behind only Texas.¹² The United States Geological Service ("USGS") has estimated there is a total of 7.4 billion barrels recoverable within the Bakken shale formation.¹³

When oil is extracted through hydraulic fracturing, as it is done in the Bakken shale region, natural gas is a byproduct of the production process.¹⁴ That resulting natural gas is called associated natural gas, defined as "natural gas produced as a by-product of the production of crude oil."¹⁵ That natural gas can be connected to a pipeline, captured through another process or flared off on site. There are roughly 300,000 miles of natural gas pipelines in the United States, on the basis of data through 2007 and 2008.¹⁶ Only 1873 of those miles of natural gas pipelines are within the North Dakota borders

to distribute natural gas produced within the state.¹⁷ Without a sufficient number of pipelines to transport the natural gas extracted from the secluded areas in North Dakota, it is very difficult to capture and utilize that gas. Since the discovery of flaring and its detrimental effects in 1929, and still today, flared natural gas in the United States and the world has mostly been caused by lack of infrastructure to carry and utilize the gas in an efficient manner.¹⁸

B. Natural Gas Flaring

This section will give substantial background into different aspects of natural gas flaring, such as what it is and how it impacts humans and the surrounding natural environment. Section 1 defines flaring in detail and general background information. Section 2 more specifically discusses natural gas flaring as it takes place in North Dakota and the Bakken region. Section 3 lays out many other effects of natural gas flaring, such as economic, environmental, and human and animal health.

I. What Is Flaring?

Natural gas flaring is the burning of natural gas or associated gases at the wellhead of an oil drill during the process of extracting oil.¹⁹ This gas is burned off as a way to dispose of the gas when the operator does not have the ability, or chooses not to use that gas for a beneficial, non-wasteful purpose.²⁰ Without a market for the gas within the immediate area, the producers find the burning of natural gas to be a more economic option of disposal. Natural gas flaring in North Dakota and other places around the United States generally occurs when there is a lack of gathering pipeline infrastructure or no other economic alternatives of disposing or utilizing the gas.²¹ Flares are normally visible and produce heat and noise while releasing other harmful chemicals.²² The chemicals that are produced as a result of the combustion of the associated gas are carbon dioxide ("CO₂"), nitrogen dioxide, and other greenhouse gases ("GHG") and volatile organic compounds ("VOC").²³

The main adverse effect of flaring is the release of carbon dioxide into the air as a result of burning the natural gas. Although the flare does release carbon dioxide into the air, the carbon dioxide released by flaring is the byproduct of burning methane gas.²⁴ Methane's impact is roughly twenty to twenty-five times more harmful on GHG emissions than carbon dioxide.²⁵ The alternative process to flar-

7. Travis H. Brown, *Fracking Fuels an Economic Boom in North Dakota*, FORBES (Jan. 29, 2014, 10:44 AM), <http://www.forbes.com/sites/travisbrown/2014/01/29/fracking-fuels-an-economic-boom-in-north-dakota/#68e4d7432283>.

8. *Fracking: Good News for North Dakota*, ENERGY FROM SHALE, <http://www.energyfromshale.org/americas-communities/north-dakota> (last visited Jan. 17, 2016).

9. *North Dakota Natural Gas: A Detailed Look at Natural Gas Gathering*, N.D. PIPELINE AUTHORITY 1 (Oct. 21, 2013) [hereinafter N.D. PIPELINE AUTHORITY], <https://ndpipelines.files.wordpress.com/2012/07/ndpa-detailed-look-at-gas-gathering-2013.pdf>.

10. Ryan Salmon & Andrew Logan, *Flaring Up: North Dakota Natural Gas Flaring More Than Doubles in Two Years*, CERES 2 (July 2013), <https://www.ceres.org/resources/reports/flaring-up-north-dakota-natural-gas-flaring-more-than-doubles-in-two-years>.

11. Chip Brown, *North Dakota Went Boom*, N.Y. TIMES MAG., Jan. 31, 2013, <http://www.nytimes.com/2013/02/03/magazine/north-dakota-went-boom.html>.

12. Stephen J. Lee, *North Dakota Tops Alaska in Oil Production, Trailing Only Texas*, GRAND FORKS HERALD (May 14, 2013, 8:43 PM), <http://www.inforum.com/content/north-dakota-tops-alaska-oil-production-trailing-only-texas-1>.

13. USGS FAQs: *Does the Bakken Formation Contain More Oil Than Saudi Arabia?*, U.S. DEP'T INTERIOR: U.S. GEOLOGICAL SURVEY, <https://www2.usgs.gov/faq/categories/9778/3144> (last modified June 15, 2016).

14. See Kelly A. Williams & Joshua B. Cannon, *Frontier Flaring: Science & Economics, Politics & Regulation—The Future of Flaring*, in 60 ANN. ROCKY MOUNTAIN MIN. L. INST. PROC. ch. 5, § 5.02[1] (Rocky Mountain Mineral L. Found., 2014), <http://www.wsmtdlaw.com/images/00338250.PDF>.

15. U.S. EPA Office of Air Quality Planning and Stds., *Oil and Natural Gas Sector Hydraulically Fractured Oil Well Completions and Associated Gas During Ongoing Production*, U.S. ENVTL. PROTECTION AGENCY 5 (Apr. 2014), <http://www.ourenergypolicy.org/wp-content/uploads/2014/04/epa-fracking>.

16. *About U.S. Natural Gas Pipelines—Transporting Natural Gas*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/mileage.html.

17. *Id.*

18. Ehrman, *supra* note 5, at 557.

19. PATRICK H. MARTIN & BRUCE M. KRAMER, *MANUAL OF OIL & GAS TERMS* 385 (Howard R. Williams & Charles J. Meyers eds., 15th ed. 2013).

20. *Id.*

21. N.D. PIPELINE AUTHORITY, *supra* note 9, at 1.

22. INT'L ASS. OF OIL & GAS PRODUCERS, *REP. NO. 2.79/288, FLARING & VENTING IN THE OIL & GAS EXPLORATION & PRODUCTION INDUSTRY: AN OVERVIEW OF PURPOSE, QUANTITIES, ISSUES, PRACTICES AND TRENDS 1-3* (2000), <http://www.ogp.org.uk/pubs/288.pdf>.

23. Ehrman, *supra* note 5, at 559-60.

24. N.D. PIPELINE AUTHORITY, *supra* note 9, at 1.

25. *Id.*

ing, venting, involves releasing methane gas directly into the air. Venting is “the controlled release of unburned gas into the atmosphere.”²⁶

2. North Dakota Flaring

Currently, about 8% of the associated natural gas in North Dakota is being flared.²⁷ That number is exponentially higher than the current national average of less than 1% flared gas.²⁸ Flares not only cause environmental effects through the release of CO₂, but they also adversely affect the North Dakota industry. In 2012, North Dakota oil and gas producers flared more than \$1 billion of natural gas that otherwise could have been captured and sent to the market.²⁹ Although flaring natural gas is better than releasing pure methane into the air through venting, North Dakota is still flaring a significantly higher percentage of natural gas than the rest of the United States. Additionally, the fact that North Dakota is the second highest producer of oil and natural gas means it has a large impact on the overall market. As of 2014 the total amount of natural gas vented and flared was 293,916 million cubic feet, with 129,916 million cubic feet being released in North Dakota.³⁰ The next closest state is Texas, with 90,125 million cubic feet of natural gas being vented or flared in 2014.³¹

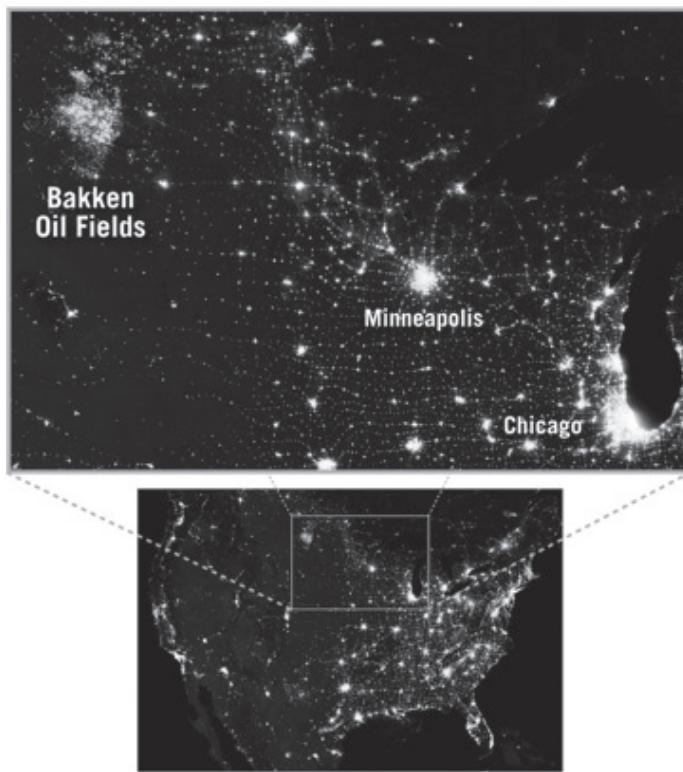
The natural gas flares produced in the Bakken region in North Dakota can not only be seen for miles, but are also visible from satellites in space.³² Looking at the satellite image in Figure 1, it appears that there is a very large city, larger than Minneapolis, on the western edge of North Dakota.³³ The sizeable amount of lights visible in the Bakken region are caused by the light produced from flaring. In addition to the light produced, the flares are the byproduct of the combustion of associated gas creating another adverse result of extreme temperatures emanating from the flare stacks.

3. Other Impacts of Flaring

As well as the financial and economic concerns of flaring, there are environmental effects associated with the flaring of natural gas. Flaring reduces the amount of dangerous GHGs emitted compared to venting, but those total GHG emissions remain at an unacceptably high level. In 2012 alone,

26. INT’L ASS. OF OIL & GAS PRODUCERS, *supra* note 22, at 2.
 27. Amy Dalrymple, *EPA Rules Would Hurt North Dakota Effort to Curb Flaring*, *Helms Says*, BISMARCK TRIB., July 6, 2016, http://bismarcktribune.com/news/state-and-regional/epa-rules-would-hurt-north-dakota-effort-to-curb-flaring/article_00393b91-7cd0-5196-829e-42fa501b1920.html.
 28. *Over One-Third of Natural Gas Produced in North Dakota Is Flared or Otherwise Not Marketed*, U.S. ENERGY INFO. ADMIN. (Nov. 23, 2011), <http://www.eia.gov/todayinenergy/detail.php?id=4030>.
 29. Salmon & Logan, *supra* note 10.
 30. *Natural Gas Gross Withdrawals and Production*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_VGV_mmmcf_a.htm (last visited Mar. 26, 2016).
 31. *Id.*
 32. See *Gas Flaring as Seen From Space*, *supra* note 1; Williams & Cannon, *supra* note 14, at 2.
 33. *Gas Flaring as Seen From Space*, *supra* note 1.

Figure 1
North Dakota Gas Flares
Light Up the Night Sky



Ceres

Credits: NASA Earth Observatory/NOAA NGDC © 2012

www.ceres.org

Gas Flaring as Seen from Space, CERES, <http://www.ceres.org/industry-initiatives/oil-and-gas/gas-flares-from-space> (last visited Mar. 26, 2016).

North Dakota produced about 4.5 million metric tons of CO₂ through flaring, which could be compared to the annual emissions of around a million cars on the road.³⁴ With the public and government’s growing concerns regarding environmental impacts and climate change, the environmental effects associated with the flaring of natural gas remains a persistent, yet rectifiable, problem.

Recently, scholars have begun to examine the health of those living in the vicinity of natural gas flaring processes. The Canadian Center for Energy published a flaring “questions and answers” document that addressed this issue.³⁵ Effects such as respiratory, skin, and vision problems have been associated with exposure to natural gas flaring and the chemicals and particulate matter released during that process.³⁶ Other byproducts of flaring, such as odors and light, have been found to cause a decrease in quality of life.³⁷ The main impact on residents’ quality of life is lack of sleep due

34. Williams & Cannon, *supra* note 14, at 4.

35. ROBERT D. BOTT, *FLARING: QUESTIONS + ANSWERS* 13 (Canadian Ctr. For Energy Info., 2d ed. 2007).

36. *Id.*

37. *Id.*

to sulfurous odors and constant light pollution.³⁸ The Union of Concerned Scientists conducted a study of the air near the point of flaring and air further away and found that two of the six common pollutants regulated by the Environmental Protection Agency (“EPA”), particulate matter and ground level ozone, were present in higher levels in the air that was closer to the flaring.³⁹ The same study found that living within a half mile of these wellhead flaring sites causes a greater risk of health problems, such as cardiovascular disease, cancer, and respiratory problems.⁴⁰

Figure 2: Natural Gas Flares Close to Home



Frank Jossi, *Fuel Added to the Flaring Fight in North Dakota*, MIDWEST ENERGY NEWS, Sept. 9, 2015, <http://midwestenergynews.com/2015/09/09/fuel-added-to-flaring-fight-in-north-dakota/>.

Figure 2 shows just how close some of the gas wellheads are to local ranches.

The vast Bakken region is covered in flares such as the one pictured in Figure 2. North Dakota and the NDIC have taken some steps to reduce the flaring and the associated negative effects, but none of those efforts have reached the full potential of reductions. The next section introduces the NDIC and the regulations they currently have in place.

II. Legal Background

This section will describe the North Dakota Industrial Commission, the state agency responsible for regulating the extraction and production of oil and gas, as well as the statutory authority given to NDIC. Section B will discuss how the current NDIC regulations and policies on flaring are causing adverse economic impacts to landowners and the state. Section C will explain NDIC regulations that are applicable to flaring. Section D will discuss the recent changes in the North Dakota flaring regulations and section E will briefly discuss the potential impacts of other federal regulations on flaring in North Dakota. Section F briefly states various challenges States and regulated entities have found while trying to capture nature gas presenting a problem that needs to be addressed. Section G briefly explains the new flare to fuel technology that can be used in tandem with other programs to increase the success of decreasing flaring. Lastly, section

38. *Id.*

39. Frank Jossi, *Fuel Added to the Flaring Fight in North Dakota*, MIDWEST ENERGY NEWS, Sept. 9, 2015, <http://midwestenergynews.com/2015/09/09/fuel-added-to-flaring-fight-in-north-dakota/>.

40. *Id.*

H will introduce a case study of a successful cap and trade program, the EPA’s Acid Rain Program, and what made that program so successful.

A. North Dakota Industrial Commission

The NDIC is the state agency within North Dakota that is given authority over oil and gas extraction regulations.⁴¹ Chapter 38-08 of the North Dakota Century Code (“NDCC”) controls the broad authority given to the NDIC over oil and gas resources.⁴² The authority “equipped the Industrial Commission with comprehensive powers to regulate oil and gas development.”⁴³

The Declaration of Policy of the NDIC states that it is in the public interest to promote the development of the natural resources of the state, explicitly oil and natural gas, in a way to achieve the greatest possible economic recovery while preventing waste.⁴⁴ The NDIC has jurisdiction over all persons and property necessary to enforce its provisions. Additionally, the NDIC has investigatory authority and a duty to decide whether waste exists or is imminent.⁴⁵

B. Economic Impacts of NDIC Regulations and Policies on Flaring

As discussed above, the process of flaring has many impacts and consequences. The commission responsible for regulating the entire oil and gas production industry in North Dakota, the NDIC, has explained the focus on economics in their declaration of policy:

[I]n the public interest to foster . . . the development, production, and utilization of natural resources of oil and gas in the state in such a manner as will prevent waste . . . that the greatest possible *economic* recovery of oil and gas be obtained within the state to the end that landowners . . . and the general public realize and enjoy the greatest possible good from these vital resources.⁴⁶

The process of flaring has significant economic impacts on not only the oil and gas industry but also the state and residents of North Dakota. In May 2013 alone, 266,000 thousand cubic feet (“Mcf”) of natural gas was flared a day, representing roughly \$3.6 million in lost revenue if that gas was sold and utilized.⁴⁷ In addition to the impact of lost revenue within the industry, many mineral owners complain of their lost flared gas royalty revenue that is often not paid to them.⁴⁸ There is an exception within the NDIC flaring regulations that allow the well operators to avoid paying otherwise required royalties to the mineral rights owners if they

41. *Wisdahl v. XTO Energy Inc.*, No. 4:13-cv-136, 2014 U.S. Dist. LEXIS 184916, at *6–7 (D.N.D. May 14, 2014).

42. N.D. CENT. CODE § 38-08 (2015).

43. *Wisdahl*, 2014 U.S. Dist. LEXIS 184916, at *7 (citing *Continental Resources, Inc. v. Farrar Oil Co.*, 559 N.W.2d 841, 845 (N.D. 1997)).

44. N.D. CENT. CODE § 38-08-01.

45. *Id.* § 38-08-04.

46. *Id.* § 38-08-01 (emphasis added).

47. *Salmon & Logan*, *supra* note 10.

48. *Williams & Cannon*, *supra* note 14.

can prove that it is “economically infeasible” to capture the gas.⁴⁹ If this exception did not exist, the mineral rights owners would be owed the profit they would have made on that gas as if it was sold in the market.

There are some instances in which flared gas is not even subject to taxation, such as during the first year of production and beyond the first year, possibly indefinitely, if they can prove “economic infeasibility.”⁵⁰ A report analyzing the economic potential of the flared natural gas found that North Dakota lost approximately \$854 million in taxes from 2010 to 2013 that could have been paid on that flared gas.⁵¹

C. Original NDIC Flaring Regulations

The three relevant NDIC regulations regarding natural gas flaring are discussed below: the (1) waste prohibited regulation; (2) restriction on flaring natural gas; and (3) flaring exemption.

Under the NDIC, established in the NDCC, are the regulations regarding the production of oil and natural gas resources. As stated in the Declaration of Policy for the NDIC, the prevention of waste is a priority.⁵² This abstract priority of preventing waste is further codified in section 38-08-03 of NDCC, named Waste Prohibited, with the simple explanation of “waste of oil and gas is prohibited.”⁵³ The definition of waste includes “[t]he inefficient, excessive, or improper use of, or the unnecessary dissipation of reservoir energy[.]” and “[t]he production of oil or gas in excess of transportation or marketing facilities or in excess of reasonable market demand.”⁵⁴

The associated natural gas produced with the extraction of crude oil from an oil well is subject to additional restrictions spelled out in section 38-08-06.4 of the NDCC, aptly named Flaring of Natural Gas Restricted.⁵⁵ A well that produced gas during the crude oil extraction process is permitted to flare that gas during a one-year period from the date of first production from the well.⁵⁶ After one year the well must cease flaring and must fall into one of the five acceptable options listed.⁵⁷ Those options are: (1) capped; (2) connected to a gas gathering line; (3) equipped with an electrical generator that consumes at least 65% of the gas from the well; (4) equipped with a system that intakes at least 75% of the gas; or (5) equipped with other value-added processes, which reduce the volume or intensity of the flare by more than 60%.⁵⁸ Any well that is

operated in violation of these regulations must pay royalties to the royalty owners of the value of the flared gas in addition to a production tax on the flared gas.⁵⁹

While the section prohibiting waste sounds like a bright line rule, there are various exceptions that allow for the waste of oil or natural gas. The largest exception allowing for waste is found in the flaring exemption. The flaring exemption is found in two places within the North Dakota regulations, section 38-08-06.4(6) of NDCC, and section 43-02-03-60.2 of the North Dakota Administrative Code. The exemption permits that any producer who can show “that connection of the well to a natural gas gathering line is *economically infeasible* . . . or that a market for the gas is not available” can obtain an exemption from this section.⁶⁰

Economically infeasible is defined in the North Dakota Administrative Code. Many of the wells that currently add to the amount of flaring in North Dakota receive their authority to do so under this exemption, therefore the definition of economically infeasible is crucial to this analysis.

The connection of a well to a natural gas gathering line is “economically infeasible” under North Dakota Century Code 38-08-06.4, if the direct costs of connecting the well to the line and the direct costs of operating the facilities connecting the well to the line during the life of the well, are greater than the amount of money the operator is likely to receive for the gas, less production taxes and royalties, should the well be connected. In making this calculation the applicant may add ten percent to the amount of the cost of connecting the well and of operating the connection facilities used to determine whether a connection is economically infeasible.⁶¹

Essentially the operator of the well is able to flare a significant portion of the associated natural gas if the amount of money the operator could receive for that gas on the market is less than the cost of building new infrastructure to capture it plus 10%. Realizing that this exemption was allowing operators to flare more gas than anticipated, the NDIC’s attempt to incentivize the capture of gas has proven to be insufficient to make a significant difference.

D. Recent Changes in Flaring Reduction Rules

North Dakota has recently changed the restrictions applicable to natural gas in various different ways. Section 1 will discuss the gas capture goals that were established by the North Dakota Petroleum Council’s Flaring Task Force. Section 2 will discuss the 2015 decision to push back flaring reduction targets, and section 3 will describe the current credit program implemented by the NDIC.

49. N.D. CENT. § 38-08-06.4. “The connection of a well to a natural gas gathering line is ‘economically infeasible’ under North Dakota Century Code section 38-08-06.4, if the direct costs of connecting the well to the line and the direct costs of the operating facilities connecting the well to the line during the life of the well, are greater than the amount of money the operator is likely to receive for the gas, less production taxes and royalties, should the well be connected.” N.D. ADMIN. CODE § 43-02-03-60.2 (2014).

50. *Id.*

51. Jossi, *supra* note 39.

52. N.D. CENT. § 38-08-01.

53. *Id.* § 38-08-03.

54. *Id.* § 38-08-02(19).

55. *Id.* § 38-08-06.4.

56. *Id.* § 38-08-06.4(1).

57. N.D. CENT. § 38-08-06.4(2).

58. *Id.*

59. *Id.* § 38-08-06.4(4).

60. *Id.* § 38-08-06.4(6) (emphasis added).

61. N.D. ADMIN. CODE § 43-02-03-60.2 (2014).

I. Gas Capture Goals

The NDIC created the gas capture goals for new and existing wells within North Dakota through Order 24665 in April 2014.⁶² Order 24665 reinforced the targets made by the North Dakota Petroleum Council's Flaring Task Force of 85% by January 2016, and 90% by October 2020.⁶³ Although the goals are only targets and therefore do not have legally binding force, Order 24665 states that "the restrictions imposed by this order will strive to meet such goals."⁶⁴

Although there are restrictions on the flaring of natural gas imposed by that order stated above, it also states that all wells that have received an exemption to section 38-08-06.4 of NDCC, the restriction on flaring of natural gas, shall be allowed to produce crude oil at a maximum efficient rate.⁶⁵ All wells that do not meet the gas capture goals after the first 90 days of production shall have restricted production rates.⁶⁶ A well that captures at least 60% of associated gas shall be restricted to 200 barrels of oil per day and all wells that capture less associated gas shall be restricted to 100 barrels of oil per day.⁶⁷

2. Push Back of Flaring Targets

In late 2015 the NDIC voted on a plan that would change the gas capture targets established by the Flaring Task Force in January of 2014. The NDIC unanimously re-worked the gas capture levels to give an additional ten months to meet the 85% capture goals.⁶⁸ The other targets were also pushed back to make the new goals 80% by April 2016, 85% by November 2016, and 91% by November 2020.⁶⁹

In addition to the overall targets being pushed back, the NDIC has granted many requests by companies to either exempt or delay the date of compliance with these goals. The commission has stated that they will grant exemptions to companies who come to them with "extenuating circumstances."⁷⁰

3. Credit Program

One program that the NDIC created to deal with the excessive flaring problem in North Dakota is a flaring credit program. That program allows for companies that exceed gas

capture goals for ninety days to bank credits for volumes captured and apply them to future months.⁷¹ These credits expire after three months and cannot be transferred to another company; the company that earned them must use them.⁷² Although this program on face value appears to limit the amount of flaring generated by the various producers in the state, in practice, the true potential of a credit program is not fully realized, as will be explained in the legal analysis section below.

E. Impact of Recent Federal Actions

Although regulation of extraction and production at the wellhead is governed at the state level, federal actions and regulations can have a large impact on the effectiveness of state decisions. Section 1 will discuss the recent Bureau of Land Management ("BLM") regulations of flaring on public and tribal lands. Section 2 will describe the proposed Clean Power Plan and the implications if that is upheld. Section 3 will explain possible effects the repealing of the oil embargo will have on the oil market.

I. Federal BLM Flaring Regulations

On January 17, 2017, the BLM's final rule on venting and flaring of natural gas on public lands became effective.⁷³ The rule attempts to limit the amount of wasted natural gas on public and tribal lands from venting, flaring, and leaks during the production of oil and natural gas. The rule will require companies to perform leak inspections, replace outdated equipment, and limit the amount of flaring.⁷⁴ Companies will be limited to flaring only a percentage of the total volume of gas produced each month.⁷⁵ Beginning with 85 percent capture each month in 2017 and eventually increasing to 98 percent capture in 2026.⁷⁶ Although this strict new rule is only applicable to public and tribal lands, it shows the states, specifically North Dakota, what the federal government feels is an acceptable current flaring rate and what each state should be working toward.

The North Dakota BLM field office manages over 4.1 million acres of Federal and tribal land with approximately 2000 oil and gas leases.⁷⁷ This significant amount of land covered by the BLM regulations and therefore affected by this rule will have a large impact on the oil and gas industry in North Dakota. The proposed rule was open to comments and the NDIC and various other actors within the oil and gas industry have made comments on the rule.⁷⁸

62. *In re Bakken, Bakken/Three Forks, and/or Three Forks Pool Field Rules*, N.D. Indus. Comm'n Order No. 24665 (Apr. 22, 2014) [hereinafter Order No. 24665], <https://www.dmr.nd.gov/oilgas/or24665.pdf>.

63. *Id.*; N.D. PETROLEUM COUNCIL, NDPC FLARING TASK FORCE (N.D. Indus. Comm'n, Jan. 29, 2014).

64. Order No. 24665, *supra* note 62, at 4.

65. *Id.*

66. *Id.*

67. *Id.*

68. Jessica Holdman, *Flaring Benchmark Delayed by 10 Months*, BISMARCK TRIB., Sep. 24, 2015, http://bismarcktribune.com/bakken/flaring-benchmark-delayed-by-months/article_db29d1be-bf95-57d3-aa28-d742647409f7.html.

69. *Id.*

70. Amy Dalrymple, *North Dakota Industrial Commission Grants Flaring Exemption*, GRAND FORKS HERALD (Apr. 21, 2015), <http://www.grandforksherald.com/news/region/3727953-north-dakota-industrial-commission-grants-flaring-exemption>.

71. *Id.*

72. *Id.*

73. Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83008 (U.S. Dep't of the Interior Nov. 18, 2016) (to be codified at 43 C.F.R. pts. 3100, 3160, 3170).

74. *Id.*

75. *Id.* at 83011.

76. *Id.*

77. *North Dakota Field Office*, U.S. DEP'T INTERIOR BUREAU LAND MGMT., http://www.blm.gov/mt/st/en/fo/north_dakota_field.html (last updated June 21, 2016).

78. Bureau of Land Mgmt., U.S. Dep't of the Interior, Comment on Proposed Rule, FR Doc. #2016-01865, to Reduce Waste of Natural Gas From Venting,

2. Clean Power Plan

The EPA's recently proposed Clean Power Plan will have a dramatic impact on the natural gas market of the United States, although it is subject to change. One of the proposed goals of the Clean Power Plan is the decline in the use of coal for generating electricity.⁷⁹ This decline in the use of coal is expected to drastically increase the demand for natural gas as a source of generating electricity.⁸⁰ The switch from coal-fired generation to natural gas-fired generation is the predominant compliance strategy as the implementation of the Clean Power Plan commences.⁸¹

One impact of the increased demand for almost any commodity is the increase in the price of that commodity. With the possible increase in the price of natural gas, it is likely that it will be much more economical for the companies to capture and sell the gas that is currently being flared, even if that requires the building of additional infrastructure. The increase in the use of natural gas fired generation as a main compliance tool for EPA's Clean Power Plan could change the natural gas market to the extent that flaring a large percentage of their natural gas would no longer be economically worthwhile to North Dakota.

Although the Clean Power Plan could have an effect on North Dakota's need for further flaring regulations, the implications rely on whether or not EPA's final rule will be upheld during its current litigation. The Supreme Court, in an unprecedented action, stayed the implementation of the Clean Power Plan, in an order on February 9, 2016, pending review in the United States Court of Appeals for the District of Columbia Circuit.⁸² The order gave no explanation or reasoning for its decision and therefore is not incredibly helpful in deciding the eventual outcome of EPA's rule.⁸³ One important factor to consider is that this order was issued 5-4, with Justice Scalia ruling to stay the order. Due to the sudden death of Justice Scalia, and without a current replacement on the court, the votes for and against the Clean Power Plan are now even, creating even more uncertainty for the future of the Clean Power Plan.

3. Repealing of the Oil Embargo

On December 18, 2015, the Consolidated Appropriations Act of 2016, H.R. 2029, was signed into law and repealed the

ban on U.S. exports of crude oil.⁸⁴ The impacts of this repeal have not yet been confirmed, but there has been speculation on its impact to the production rate of oil in the United States. The Speaker of the House, Paul Ryan, has stated that lifting the oil export ban "is like having 100 Keystone pipelines."⁸⁵ The lifting of the export ban is expected to drive up the investment in domestic oil extraction, with particular emphasis in the Bakken Formation oil fields.⁸⁶ With the additional investment and increased production of crude oil in North Dakota, the overall amount of potential associated natural gas flaring will increase as well.

F. Challenges to Natural Gas Capturing

The North Dakota Pipeline Authority released an article listing what they believe the main challenges are in reducing the natural gas flaring epidemic in their state.⁸⁷ The list of those challenges includes planning and coordination, obtaining easements, enhancing and building new pipelines, and increasing flaring alternatives.⁸⁸ These challenges are proof that there is a problem in North Dakota that needs to be addressed. The NDIC has yet to create feasible, successful flaring reduction programs that are not inhibited by these listed challenges.

G. Flare to Fuel Technology

The relatively new flare to fuel technology could be a way to capture even more of the excess natural gas that can be utilized. This new technology can liquefy hydrocarbon gases that are currently being flared and deliver natural gas for vehicular use at remote locations.⁸⁹ This technology could be paired with other programs such as cap and trade or subsidizing the liquefied natural gas ("LNG") processes. This is a successful LNG process that could easily be utilized by wells that are located in remote locations, not easily accessible by pipeline infrastructure. At the very least, the use of this technology until additional infrastructure can be built can produce lower flaring rates that were otherwise unattainable.

H. Case Study: EPA's Acid Rain Program

The Acid Rain Program ("ARP"), established under Title IV of the 1990 Clean Air Act by the EPA to reduce sulfur dioxide ("SO₂") and nitrogen oxide ("NO_x") emissions, began in 1995.⁹⁰ The ARP was the first and longest

Flaring and Leaks During Oil and Natural Gas Production, No. BLM-Extension-2016-0001 (Mar. 16, 2016), <https://www.regulations.gov/document?D=BLM-2016-0001-0074>.

79. *Analysis of the Impacts of the Clean Power Plan*, U.S. ENERGY INFO. ADMIN. (May 22, 2015), <http://www.eia.gov/analysis/requests/powerplants/cleanplan/>.

80. *Id.*

81. *Id.*

82. Jonathan H. Adler, *Supreme Court Puts the Brakes on the EPA's Clean Power Plan*, WASH. POST, Feb. 9, 2016, <https://www.washingtonpost.com/news/volokh-conspiracy/wp/2016/02/09/supreme-court-puts-the-brakes-on-the-epas-clean-power-plan/>.

83. West Virginia v. EPA, No. 15A773 (U.S. Feb. 9 2016) (order granting stay in pending case), [http://www.ago.wv.gov/publicresources/epa/Documents/15A773%20West%20Virginia%20v.%20EPA%20-%20USSC%20stay%20order%20\(M0118593xCECC6\).pdf](http://www.ago.wv.gov/publicresources/epa/Documents/15A773%20West%20Virginia%20v.%20EPA%20-%20USSC%20stay%20order%20(M0118593xCECC6).pdf).

84. Consolidated Appropriations Act of 2016, H.R. 2029, 114th Cong. (2015); Consolidated Appropriations Act of 2016, Pub. L. No. 114-113, 129 Stat. 2242 (2016).

85. Samantha Page, *Paul Ryan Just Made the Case for Why Lifting the Oil Export Ban Is Really Bad*, THINK PROGRESS (Dec. 22, 2015), <http://thinkprogress.org/climate/2015/12/22/3734511/ryan-export-ban-like-keystone/>.

86. *Id.*

87. N.D. PIPELINE AUTHORITY, *supra* note 9.

88. *Id.*

89. *APG Licenses Flare to Fuel Technology for Vehicular Use*, NGV GLOBAL NEWS, Aug. 14, 2015, <http://www.ngvglobal.com/blog/apg-licenses-flare-to-fuel-technology-for-vehicular-use-0814>.

90. *Acid Rain Program*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/airmarkets/acid-rain-program> (last updated Sept. 25, 2015).

national cap and trade program that introduced a market-based allowance trading system that has effectively reduced emissions.⁹¹ By using market-based incentives, a cap and trade program such as ARP allows regulated sources to have flexibility to reduce emissions in the most cost-effective way possible.⁹² A 2003 Office of Management and Budget (“OMB”) study reiterated the success of the ARP by finding that it “accounted for the largest quantified human health benefits—over \$70 billion annually—of any major regulatory program” within the last 10 years.⁹³ The benefits of the program exceeded costs by more than 40:1.⁹⁴ The approach used by ARP is a market-based cap on the maximum amount of SO₂ that electric power plants were allowed to emit nationwide.⁹⁵ The trading component that allows plants to choose their method of compliance gives the program flexibility. The options an operator may choose are to: (1) lower emissions to meet the cap; or (2) pay another power plant for their credits.⁹⁶

A cap and trade system is attractive because it has four main characteristics that balance the interests of all sides of the climate change debate. First, a cap and trade system provides certainty of environmental performance.⁹⁷ With the cap and trade mechanism a hard cap on the amount of total pollutants permitted to be emitted ensures that no more than that cap will be released into the atmosphere. This certainty in limitation of emissions satisfies the interests of environmentalists. Second, it allows for planning certainty for regulated entities.⁹⁸ Cap and trade is an established mechanism that is consistent from month to month. The regulated entities are aware of their options and can plan into the future, which is an essential part of the regulated energy industry. Third, the flexibility of the program allows regulated entities to choose the lowest-cost reduction option.⁹⁹ Having the option to lower emissions or pay another producer for credits allows the entity to decide which is the best, most economically feasible strategy for their circumstance. Lastly, a cap and trade program requires lower costs to administer than other programs.¹⁰⁰

The success of the ARP highlights what specific components of a cap and trade system are needed in order to achieve satisfactory results. A big reason ARP was so successful in reducing SO₂ and NO_x emissions was because they included vigorous compliance and enforcement mechanisms that were

managed and supervised by a central authority.¹⁰¹ It is also very important to create caps that are clearly lower than existing emissions and to ratchet those down over time.¹⁰²

In addition to the specific features discussed above, there are core issues that should be considered for any cap and trade program. These issues include: (1) what sectors will be covered; (2) what pollutants will be included; (3) how permits will be allocated; (4) leakage (emissions rising elsewhere as a result); (5) cost control; (6) banking; and (7) controlling for “hot spots.”¹⁰³

When choosing which economic sectors to include, factors to consider are size, current emitting amount, and location of emission sources.¹⁰⁴ Permits may be allocated either by distributing a certain amount of credits to each operator of an emitting facility or through auctioning.¹⁰⁵ An auction sets a price for credits and allows facilities to pay for how many credits they would like to be allocated. Leakage, the emissions rising elsewhere, can result if a facility reduces its emissions of the sectors that are covered and counters that by increasing emissions in sectors that are not covered by the cap and trade program.¹⁰⁶ Another option for cap and trade is to set either a price floor or ceiling on the credits.¹⁰⁷ The volatility of price can significantly disrupt the success of a cap and trade program. By including a price floor, the program ensures that all emitters decide it is most beneficial to them to buy excess credits instead of attempting to reduce their emissions. Banking can be included within a cap and trade program to add flexibility and options for those participating. Banking is the process of being able to store the credits and use or sell them at a later time.¹⁰⁸ All of these decisions should be made at the initiation of the program to ensure consistency and transparency for those effected.

EPA’s ARP began during the first phase by covering only larger utility units, but in January 2000 the program was expanded to cover smaller utility units as well.¹⁰⁹ The second principle, what greenhouse gases will be covered, was limited to sulfur dioxide and nitrogen oxide, but the program actually resulted in a decrease in mercury emissions, fine particulate matter, and ozone.¹¹⁰ The EPA administered the allocation process through an auction of “pollution rights” to regulated entities.¹¹¹ The ARP program solved the problem of leakage or “hot spots” in one way by allowing an opt-in provision for electric generators that were not automatically subject to the cap and trade program.¹¹² Hot spots occur when a cap and trade program intentionally or unintentionally creates much

91. *Id.*

92. *Id.*

93. Daniel J. Weiss, *A Broken Crystal Ball: Global Warming Solution Studies Will Overestimate Costs, Underestimate Benefits*, CTR. FOR AM. PROGRESS (Feb. 26, 2008, 9:00 AM), <https://www.americanprogress.org/issues/green/news/2008/02/26/3998/a-broken-crystal-ball/>.

94. *Id.*

95. *Acid Rain Program*, *supra* note 90.

96. *Id.*

97. Tim Profeta & Brigham Daniels, *Design Principles of a Cap and Trade System for Greenhouse Gases*, NICHOLAS INST. FOR ENVTL. POL’Y SOLUTIONS (2005), <https://nicholasinstitute.duke.edu/sites/default/files/publications/design-principles-of-a-cap-and-trade-system-for-greenhouse-gases-paper.pdf>.

98. *Id.*

99. *Id.*

100. *Id.*

101. Keith Casto, *California Should Use Marketplace to Cut Emissions*, LAW360 (May 2, 2007), <http://www.law360.com/articles/23919/california-should-use-marketplace-to-cut-emissions>.

102. *Id.*

103. Profeta & Daniels, *supra* note 97, at 8–14.

104. *Id.* at 5.

105. *Id.* at 9.

106. *Id.*

107. *Id.*

108. Profeta & Daniels, *supra* note 97, at 9.

109. James Griffin, *How EPA’s Acid Rain Cap-and-Trade Program Works*, LION TECH. INC., Jan. 12, 2016.

110. Casto, *supra* note 101.

111. Griffin, *supra* note 109.

112. *Id.*

higher rates of emissions in one area than the surrounding area. Hot spots are produced when many facilities choose to reduce their emissions as a way to comply with the targets and sell off their extra credits. The companies that buy the credits may use all of those credits in one location, creating a “hot spot” of very high emissions. That opt-in provision created an incentive for facilities to participate in this market-based program and to possibly make a profit off of reductions instead of emitting excess greenhouse gases.

The next section lays out and analyzes the inadequacies of the current attempts the NDIC is making to address natural gas flaring and the challenges facing that effort.

III. Analysis of Current Flaring Reduction Rules and Targets

This section will analyze the NDIC’s current efforts to limit natural gas flaring. Section A will discuss the gas capture targets and how those show that the NDIC is not serious about reducing flaring. Section B will analyze the flaring credit program and introduce its flaws.

A. Gas Capture Reduction Timetable

The North Dakota Industrial Commission, established in 1919,¹¹³ is made up of commissioners that seem to be lenient to the oil and gas industry. The three-member board consists of Governor Jack Dalrymple, Attorney General, Wayne Stenehjem, and Agriculture Commissioner, Doug Goehring.¹¹⁴ The continual push back of the gas capture reduction target dates send out a message to the industry and the citizens of North Dakota that the NDIC is not as serious about flaring reductions as they claim to be. Another example that the NDIC is not serious about the flaring reductions is the granting of exemptions to the anti-flaring requirements to large companies with a lot of wells throughout North Dakota. For example, XTO Energy was granted an exemption on 105 of its wells.¹¹⁵

Although the gas capture goals seem to significantly reduce the amount of flaring in North Dakota, the national average of natural gas flaring outside of North Dakota is less than 1%. Even the lofty goal for 2020 of 91% capture does not come close to the reductions the rest of the country has been able to meet by this point. The NDIC’s leniency toward the oil and gas industry and willingness to renege on target dates point to a lack of conviction to make a significant reduction in the amount of flared natural gas and the reduction targets established do not seem to be harsh enough to make the significant change needed even if they are met.

There are possible counterarguments that the operators of the wellheads may make in opposition to the assertion that the targets are too lenient. The main argument would be that

the targets would be too expensive to implement. This argument is not persuasive if the NDIC institutes a market-based mechanism that allows flexibility for the operators in complying with the stricter targets, such as cap and trade.

B. Flaring Credit Program

The credit program allows companies that are below the maximum amount of flaring to stock up on credits for their future use. The essence of that system makes it possible for those companies to increase their flaring during other months. If the true incentive of this program was to reduce flaring, then allowing companies to stock up on flaring credits that are not transferrable to other companies does not make sense. The companies who are able to obtain credits have proven that they have the technology, infrastructure, and ability to reduce their flaring below the minimum requirements. Therefore, allowing those companies to unnecessarily use those credits during another month is not actually limiting the overall amount of natural gas that is flared. In general, the main reason for engaging in flaring natural gas is because there is not sufficient infrastructure or technology connected to the wellhead to enable the capturing of the gas. These companies that are below the limit set by the NDIC show that they are not the ones who would benefit most from future flaring credits.

Wayde Schafer, the spokesman for the North Dakota chapter of the Sierra Club, stated, “Providing rewards to companies that are still flaring at 20 times the national average doesn’t make sense if you are serious about reducing flaring.”¹¹⁶ Companies are already required to meet the targets or risk being forced to limit their production or pay hefty fines. With those enforcement measures already in place, the credit system established by the NDIC does not add any additional benefit to the reduction of flaring. Although this credit system is put forward as a way to reduce the extensive flaring of natural gas in North Dakota, the practical impact of this system seems to be insignificant. Instead of being an incentive to develop new technology or build new infrastructure in order to limit the amount of flaring, the credit program allows companies that do the very least amount of work necessary to become complacent and not strive to continue to lower the associated natural gas flares.

IV. Proposed Solutions

Many different ideas have been suggested as a solution to the natural gas flaring problem in North Dakota. This Note focuses on two solutions including a traditional cap and trade program, and potential subsidies. Section A will describe how North Dakota should introduce and implement a cap and trade program to effectively reduce the amount of flaring, and the emissions associated with flaring. Section B will discuss another alternative that can be used in addition to the cap and trade program to achieve the most success.

113. *North Dakota Industrial Commission*, N.D. St. Gov’t, <http://nd.gov/ndic/> (last visited Mar. 26, 2016).

114. *Id.*

115. Dalrymple, *North Dakota Industrial Commission Grants Flaring Exemption*, *supra* note 70.

116. James Macpherson, *North Dakota Regulators Relax Natural Gas Flaring Mandate*, NEWSOK (Oct. 22, 2015, 3:56 PM), <http://newsok.com/article/feed/908642>.

A. North Dakota Cap and Trade Program

The current credit program utilized by the oil and gas industry in North Dakota does not actually reduce the amount of natural gas being flared. A cap and trade program would ensure that the producers do actually reach the reduction cap, guaranteeing that companies can meet the gas capturing targets through economically sound means.

A traditional cap and trade program works by first establishing a firm “cap” on the highest amount of flaring permitted by each company or well. If a company reduces their amount of flaring to be below the specified cap, they are able to sell the extra amount below the cap to another company. This system is being used currently in the United States for carbon emissions and SO₂ as discussed above in the ARP.

With an efficient cap and trade program for the amount of flaring, those companies that are below the minimum would be able to benefit economically by trading their “credits” to other companies that are currently struggling to meet the limits. Alternatively, those companies that find it more economically efficient to purchase credits instead of limiting their emissions would also benefit. The NDIC has been granting exemptions for various companies because there are circumstances that make it a little more difficult to meet the specified limits. A cap and trade system can allow for companies that are having a difficult time, or run into an unexpected problem, to purchase flaring credits below what it would cost to fix the problem while keeping the amount of flaring throughout the state below the targets. That would be an example of the flexibility mechanisms built into a cap and trade program.

In some circumstances when a company receives an exemption from the NDIC to follow the gas capturing requirements they are also excluded from calculations of statewide and countywide flare volumes. As an example, on the NDIC Docket for just one day, Thursday, November 19, 2015, thirteen applications authorizing the flaring of gas were to be reviewed.¹¹⁷ Twelve of those applications also requested the volumes of flared gas be excluded from local, regional, and state calculations.¹¹⁸ Not only do these staggering amounts of applications show that a new, more efficient system is required, it also shows that there may be many more wells that are participating in natural gas flaring whose flaring volumes are not recorded in public calculations.

A way to make sure that the cap and trade program would be most effective would be to do calculations by volume as opposed to percentages of reductions. The current news and publications show that North Dakota is somewhat succeeding at lowering flaring.¹¹⁹ This is due to the fact that all statistics are shown in percentages of the overall gas produced.

In the near future with policies such as the Clean Power Plan and the lifting of the oil embargo, demand and production of these natural resources are likely to increase. If the cap of flared gas were a specified volume per well and/or company and not a percentage of the whole, the reduction of flared gas would be more successful. Volumes of natural gas are measured by Mcf and by using that measurement a cap that is sufficiently lower than the current level of flaring can be set.

Another important aspect of a cap and trade system is the reduction benchmarking, similar to the gas capture goals set by the Flaring Task Force. To make a meaningful impact, the cap of flared natural gas volumes should be decreased every year until a reasonable, attainable standard is implemented.

A simple way that the NDIC can implement this cap and trade program would be to take the current targets set by the Flaring Task Force and convert those numbers into the caps for the upcoming years. It is very simple for the percentages listed in the targets to be converted into the amount of permitted natural gas to be flared per day, such as in the federal BLM regulations. The industry is already aware of these targets, and therefore they would not be blindsided by this program and should be prepared to meet the goals.

The North Dakota Legislature would delegate authority to the NDIC to establish, implement, and enforce this cap and trade program. The NDIC would then create the specifications of the program as an amendment to their current regulation, flaring of gas restricted at section 38-08-06.4 of NDCC. The North Dakota cap and trade program would apply to all gas produced with crude oil from a regulated oil well, the same application as currently in section 38-08-06.4(1) of NDCC. As stated above, the cap will be set at the current percentage targets set by the Flaring Task Force, 80% by April 2016, 85% by November 2016, and 91% by November 2020, converted into volume amounts at the current rate.¹²⁰ The credits will be allocated through an auction that will be held by the NDIC with a price floor at the industrial price in 2015 of \$3.91 per Mcf.¹²¹

The NDIC is not only given the authority to establish and implement the cap and trade system but they are also given the authority to enforce non-compliance. The NDIC currently has this enforcement power with the flaring restrictions in place, therefore no new enforcement mechanism would need to be created.

The NDIC has already approved the credit program and this traditional cap and trade structure is just a step beyond that. The cap and trade program would be more economically beneficial to the industry and is not too far away from the original credit program, therefore it is very feasible that this type of structure would be approved by the NDIC and be successful at reducing the volume of flared natural gas.

In addition to the implementation of a cap and trade system in North Dakota, other programs such as federal subsidies can assist in reducing the amount of natural gas flared.

117. See *Docket for Hearing: Thursday, November 19, 2015 at 9:00 a.m.*, N.D. INDUS. COMM'N (2015), <https://www.dmr.nd.gov/oilgas/dockets/2015/docket111915.pdf>.

118. *Id.*

119. See *Natural Gas Flaring in North Dakota Has Declined Sharply Since 2014*, U.S. ENERGY INFO. ADMIN. (June 13, 2016), <https://www.eia.gov/todayinenergy/detail.php?id=26632>.

120. Order No. 24665, *supra* note 62, at 4.

121. See *Natural Gas Prices*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/dnav/ng/ng_pri_sum_dcu_nus_a.htm (last updated Oct. 31, 2016).

B. Federal Subsidies

In the event that the Clean Power Plan proposed by the EPA is upheld, the demand for natural gas is expected to increase dramatically. The flaring of natural gas is already perceived to be a waste of a finite natural resource and the increase of demand for that resource would make it an even larger waste of needed energy. An option to capitalize on the increased demand for natural gas would be possible subsidies by Congress to assist North Dakota in its current challenges of capturing the ever increasingly important natural gas.

One possible subsidy would be to the companies to allow for more economically feasible construction of natural gas pipelines to areas with more demand. The current statute allows for companies to be exempt from the reduction levels if they can make a finding that it is economically infeasible to connect their well to a gas gathering line. This subsidy would permit companies that otherwise may not have had the ability to build adequate infrastructure for the capturing of natural gas to be able to do so.

Another alternative is to subsidize the liquidation process on site to allow for alternative ways to transfer the natural gas other than by pipeline. The main issues over building infrastructure have been economics and the difficulty of obtaining easement rights on private properties. The LNG process is more expensive and therefore considered uneconomical in the minds of current producers. A subsidy could encourage the capture of additional gas, especially from the wells that are in very remote locations. The ability for wells to use the LNG technology process instead of needing to build additional pipelines, allows them to get around the substantial problems of obtaining easement rights and working through difficult winter construction seasons.

A Congress approved bill authorizing subsidies in North Dakota under specific circumstances would accomplish

these subsidies. Studies would be conducted to determine the amount of pipelines that are necessary to connect the currently remote oil and gas wells with the demand in the Northeast. The subsidy for the LNG process would be limited until the cap and trade programs first cap reduction in 2020. The subsidy is limited to this time period because its use is to give the regulated entities another opportunity to comply in an economic fashion. Federal subsidies are economically feasible because CO₂ emissions are a worldwide problem that needs to be tackled and, if successful, will provide an area of the country that has great demand less expensive natural gas alternatives.

V. Conclusion

The flaring of associated natural gas produced through the oil extraction process at oil wells has been proven to be an economic waste, and harmful to both human and environmental health. Current regulations and target goals are not being met with serious consideration by the industry or NDIC; shown by the push back of gas capture targets and the large amount of exemptions given to companies to allow excess flaring. If North Dakota and the NDIC are serious about reducing the volume of gas that is flared, then significant changes in regulation must be taken. The most effective, efficient, and feasible solution to the flaring problem is a traditional cap and trade system. In light of other recent federal actions, it would be beneficial to engage in a federal-state partnership through supporting subsidies. It is a fact that North Dakota's flaring rates are substantially higher than all other states in the United States and are contributing to many negative effects. Until regulations such as a cap and trade proposal are seriously considered and implemented, North Dakota may continue to struggle to reduce the wasted flaring of this natural resource.