GETTING AHEAD OF GREENHOUSE-GAS EMISSIONS IN AFGHANISTAN: THE CASE FOR SHIFTING FROM A COMMAND-AND-CONTROL TO A CAP-AND-TRADE REGIME

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INTRODUCTION

As a developing country that is relatively new to environmental regulation, Afghanistan's law on carbon emissions does not currently do enough to prevent the carbon emissions that contribute to global warming. If Afghanistan continues to use its current emissions control approach, the problem will only grow worse as the country builds industry and participates more fully in the global economy. However, these increases would be inconsistent with Afghanistan's obligations under the United Nations Framework Convention on Climate Change (UNFCCC). Under this convention, Afghanistan is required to mitigate, if not eradicate, its greenhouse-gas (GHG) emissions.[1] For this reason alone, Afghanistan must begin to reform its approach to regulating these emissions.

The current regulatory framework in Afghanistan is housed in the Afghan Anti-Air Pollution Act, which establishes a command-and-control system aimed at curbing air pollution;[2] however, the language is broad and it does not specifically target GHG emissions. Therefore, it is unclear whether this law will be able to curb carbon emissions or whether a new piece of legislation specifically for GHG emissions is necessary to further mitigate emissions. Furthermore, studies show that this command-and-control system is costly, discourages innovation, and does not incentivize shifting toward less polluting practices.

This article suggests that Afghanistan consider replacing the command-and-control approach with a cap-and-trade system. The cap-and-trade approach has proven to be very effective among European Union (EU) countries, making the EU a world leader in the area of carbon emissions control using a cap-and-trade system.[3] The cap-and-trade system not only creates a market for carbon emissions control, which will eventually benefit the country financially, but it also rewards efforts to replace old polluting practices with clean, environmentally sound practices.

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1. *See* Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 10, Dec 10, 1997, 37 I.L.M. 32, 36–37 [hereinafter Kyoto Protocol] (requiring all parties to implement national measures to mitigate and adapt to climate change, recognizing their common but differentiated responsibilities).

2. Moqarerae Kaahesh Wa Jelogiri Az Aloodagi Hawa [Regulation on Decrease and Prevention of Air Pollution] *Official Gazette* 991, 1388 (2009) (Afg.).

3. THOMAS J. SCHOENBAUM & MICHAEL K. YOUNG, INTERNATIONAL ENVIRONMENTAL LAW: CASES, MATERIALS, AND PROBLEMS 347 (2d ed. 2014).

Part I of this article discusses the science of climate change to underscore the need for all countries to do their part in curbing GHG emissions, even in developing nations like Afghanistan that may not currently host industries that contribute greatly to global warming but that may swiftly develop those industries in the years to come. Part II discusses the background of Afghan Law concerning the command-and-control policy, emphasizing the lack of control that actually results. Part III then discusses the policy and system that is being implemented for carbon emissions control in the EU. Finally, in Part IV, this article suggests implementing a cap-and-trade system in Afghanistan, while acknowledging the possible barriers to implementing this kind of change, including: the challenge of finding consensus among the members of the executive branch and the members of the legislature; the problems associated with implementation and enforcement; and possible resistance from the nation's developing industries. Ultimately, this article argues that cap and trade would be the best solution for Afghanistan because it would (1) encourage innovation by rewarding industry practices that produce fewer emissions, (2) balance the market through trade, and (3) potentially increase the government's financial revenue.

I. THE GLOBAL VIEW OF THE CLIMATE CHANGE ISSUE

Because science is now confirming that excessive concentration of GHGs in the atmosphere is causing climate change, the global community has begun to respond and treat climate change as a serious problem around the world.[4] This section sheds light on the global perspective on global warming, ultimately showing that while there is some disagreement over the implications of the science, the prevailing view is that global warming poses an imminent threat to the health of the planet and even developing nations need to work to stop it.

A. Science of Climate Change

Despite ongoing alleged uncertainties and denials, the science of global warming and its causes has become stronger and more universally accepted in recent years.[5] The Intergovernmental Panel on Climate Change (IPCC) in

4. BRUCE STOKES ET AL., PEW RESEARCH CTR., GLOBAL CONCERN ABOUT CLIMATE CHANGE, BROAD SUPPORT FOR LIMITING EMISSIONS 4 (Nov. 5, 2015), http://www.pewglobal.org/files/2015/11/Pew-Research-Center-Climate-Change-Report-FINAL-November-5-2015.pdf [https://perma.cc/2EVC-2YN8].

5. *See generally id.* (reporting statistics that the majority of countries consider global warming a serious problem).

its assessment reports found that GHGs affect climate change, and the existence of GHGs has been causing the earth's average temperature to rise from -0.19 degree Celsius to +0.87 degree Celsius since the industrial revolution.[6] These studies show that GHG acts as a "blanket" around the earth, preventing solar power from reflecting back out of the earth's atmosphere and causing the atmosphere to heat up.[7]

The main sources of GHGs are manufacturing power (34%, mainly carbon dioxide from fossil fuel combustion), transportation, agriculture, forestry, and land-use and development practices (AFOLU) (24%, mainly methane and nitrous oxide).[8] Among these, the production and use of electricity contributes the most to GHG emissions, especially when compounded by electricity use in other sectors that cause additional emissions of GHGs.[9]

There are many different types of GHGs;[10] however, the following five types of GHGs are the most prominent: (1) carbon dioxide, (2) hydrochlorofluorocarbons, (3) methane, (4) perfluorocarbons, and (5) sulfur hexafluoride.[11] The most detrimental gas is carbon dioxide, which is directly produced by human activity, especially through the burning of fossil fuels.[12] Scientists have been measuring temperature in the atmosphere for a few decades.[13] Upon observing patterns in the climate's temperature, scientists have concluded that climate change is in fact happening and that it is mostly caused by human activities.[14]

B. Global Perspectives on Climate Change

The Pew Research Center researches global perspectives on the significance of climate change and its adverse effects on the planet.[15] This

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6. *Global Temperature*, NAT'L AERONAUTICS & SPACE ADMIN., https://climate.nasa.gov/vital-signs/global-temperature/ [https://perma.cc/M94F-FWRR] (last visited Feb. 19, 2017).

7. *A Greenhouse Effect Analogy*, AM. CHEMICAL SOC'Y, https://www.acs.org/content/acs/en/climatescience/climatesciencenarratives/a-greenhouse-effect-analogy.html (last visited Apr. 23, 2017).

8. OTTMAR EDENHOFER ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014 MITIGATION OF CLIMATE CHANGE: WORKING GROUP III CONTRIBUTION TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 125 (2014), http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_full.pdf [https://perma.cc/E6SN-FXWQ] [hereinafter IPCC FIFTH ASSESSMENT REPORT].

9. *Id.*

10. *Id.*

11. SCHOENBAUM & YOUNG, *supra* note 3.

12. IPCC FIFTH ASSESSMENT REPORT, *supra* note 8.

13. SCOTT DEATHERAGE, CARBON TRADING LAW AND PRACTICE 5 (2011).

14. *Id.*

15. STOKES ET AL., *supra* note 4.

research, which was conducted among 40 countries, indicated that a median of 54% of the globe considers climate change a very serious problem.[16] For example, the study found that concern over climate change is significant in Latin American countries, where an average of 74% of interviewees considered climate change a very serious problem.[17] In Brazil, home of the largest carbon sink,[18] 86% of interviewees expressed the belief that climate change is a very serious problem.[19] In Chile and Peru, 77% and 75% respectively, expressed concerns about climate change.[20] Notably, China and United States showed the most skeptical perspectives, with concern expressed in only 18% and 45% respectively.[21] Overall, around the globe, a median of 54% of people consider climate change to be a serious problem; 51% of people believe that climate change is harming people today; and a median of 40% of people are very concerned that climate change will harm them personally.[22] Finally, a median of 78% of people around the world are in favor of limiting GHG emissions through an international agreement.[23]

The consequences of climate change are also of significant concern. The same report found that "droughts or water shortage" were the most prominent concern, with a median of 41% of people fearing it.[24] Other consequences that the survey covered are severe weather like floods or intense storms (with a median of 25%), long periods of unusually hot weather (with a median of 14%), and rising sea levels (with a median of 6%).[25]

These numbers indicate that concerns over climate change and its seriousness are prominent among a majority of people around the world. In an effort to improve international practices, many of these countries have come together to influence and establish international standards and rules through conventions.[26]

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16. *Id.*
17. *Id.* at 12.
18. Becky Oskin, *Amazon Rainforest Breaths in More Than It Breaths Out*, LIVE SCI. (Mar. 20, 2014, 12:53 PM), http://www.livescience.com/44235-amazon-rainforest-carbon-cycle-measured.html [https://perma.cc/GQL2-R79F].
19. STOKES ET AL., *supra* note 4.
20. *Id.*
21. *Id.*
22. *Id.* at 4, 5.
23. *Id.* at 23.
24. *Id.* at 22.
25. *Id.* at 7.
26. Kyoto Protocol, *supra* note 1, at 1.

C. Intergovernmental Panel on Climate Change (IPCC) and Paris Agreement COP 21

The IPCC is a leading international body for the assessment of climate change.[27] It was established in 1988 under the auspices of the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO) to provide a clear scientific view on the current status of climate change and its possible impacts.[28]

In its assessment reports, the IPCC concluded that the main cause of climate change is due to human activities emitting GHGs.[29] There are two different and extremely complicated carbon cycles on earth: slow and fast.[30] The fast carbon cycle is when plants absorb carbon dioxide.[31] Through a scientific process within the plants, they put oxygen back into the air.[32] The slow carbon cycle takes 100 to 200 million years to evaporate in the atmosphere and can be found mostly as fossil fuels and natural gas.[33] Since the industrial revolution, human exploitation of fossil fuels and natural gases caused carbon to evaporate into the atmosphere, causing excessive amounts of carbon dioxide to build up in the atmosphere.[34] The concentration of carbon dioxide in the atmosphere has increased from 280 parts per million (ppm) from the beginning of the industrial revolution to 403.19 ppm in February of 2016.[35]

The IPCC further predicted the future adverse effects of climate change if the current rate of GHG emissions continues.[36] In its report, the IPCC stated that by 2050, the availability of freshwater in central, south, east, and southeast Asia—particularly in the large river basin—is projected to decrease.[37] In addition, the report predicted that coastal areas in south, east,

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27. *Organization*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, http://www.ipcc.ch/-organization/organization.shtml [https://perma.cc/SUS8-K3WW] (last visited Jan. 12, 2017).

28. *Id.*

29. IPCC FIFTH ASSESSMENT REPORT, *supra* note 8.

30. SCHOENBAUM & YOUNG, *supra* note 3.

31. *Id.* at 348.

32. *Id.*

33. *Id.*

34. *Id.*

35. *Carbon Dioxide*, NAT'L AERONAUTICS & SPACE ADMIN., http://climate.nasa.gov/vital-signs/carbon-dioxide/ [https://perma.cc/DR3J-RTFT] (last updated Jan. 12, 2017).

36. LENNY BERNSTEIN ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT 26, 50–51 (2007), https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf [https://perma.cc/4NSW-HNPB].

37. *Id.*

and southeast Asia will be at the greatest risk due to excessive flooding from the seas and rivers.[38]

Key to global responses to climate change was the 21st meeting of the Conference of the Parties to the UNFCCC in Paris, France (COP21). At this conference, 196 parties signed the Paris Agreement in November of 2015, including Afghanistan, creating a pact to mitigate carbon emissions and build resilience, prosperity, and a fair future.[39] President Ashraf Ghani also participated at COP21 as the President of Afghanistan.[40] He stated that Afghanistan was willing to undertake any measure within its capacity to curb the emission of GHGs; however, the budgets to fund the infrastructure for these measures have not been specified yet.[41] President Ghani also added that Afghanistan has the capacity to generate 316,000 megawatts of energy using water, solar, and wind and that Afghanistan is planning to bridge the Middle East with South Asia to improve transference of natural gas and electricity.[42] With this statement, President Ghani confirmed Afghanistan's commitment to generate electricity using methods that do not contribute to GHG emissions.

While the Paris Agreement alone is not adequate to effect serious change, it did carve a path for the international community to work on mitigation and adaptation methods that deal with carbon emissions.[43] This Conference maintained the momentum of the global community and offered clear directions, including:

- long-term goals and signals,
- a commitment to return regularly to make climate action stronger,
- a response to the impact of extreme climate events on the most vulnerable,
- the transparency needed to ensure action takes place, and

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38. *Id.*

39. David Waskow & Jennifer Morgan, *The Paris Agreement: Turning Point for a Climate Solution*, WORLD RESOURCES INST. (Dec. 12, 2015), http://www.wri.org/blog/2015/12/paris-agreement-turning-point-climate-solution?utm_campaign=socialmedia&utm_source=facebook.com&-utm_medium=wri-page [https://perma.cc/38FB-E6SP].

40. *President Ghani Spoke in COP 21*, GOV'T AFG. (Nov. 30, 2015), http://president.gov.af/fa/news/56688 [https://perma.cc/LH35-6DXM].

41. *Id.*

42. *President Ghani Speaks in the International Conference on Climate Change*, ISLAMIC REPUBLIC AFG. (Dec. 1, 2015), http://aop.gov.af/english/1437/President+Ghani+Speaks+in+the+International+Conference+on+Climate+Change [https://perma.cc/5BSJ-JSVJ].

43. Waskow & Morgan, *supra* note 39.

- finance, capacity building and technology to enable real change.[44]

The agreement further provides a new mechanism of collaboration and unity among developed and developing countries.[45] And, it involves all nations, civil societies, companies, and nongovernmental organizations (NGOs) for the purpose of mitigation and adaptation to GHGs.[46]

II. LEGAL, ADMINISTRATIVE, AND SOCIAL RESPONSES TO CLIMATE CHANGE IN AFGHANISTAN

As in most developing countries, Afghanistan's current environmental regime is in an undesired condition. As explained above, many developing nations have come to view global warming as an important issue; however, in Afghanistan, it is not currently a prevalent concern. Lack of education has impeded awareness about the consequences of environmental degradation, and other immediate threats, like lack of security and rule of law, have dominated the focus of the government; as a result, environmental problems have not been a priority, contrary to the global perspective about the phenomena of GHGs' adverse effects. In fact, environmental issues are generally ignored by Afghan politicians and other decision-makers in Afghanistan.[47]

At the same time, Afghanistan has been ranked among the most vulnerable countries to the adverse effects of climate change.[48] Even though Afghanistan is landlocked, the consequences of drought, desertification, air pollution, extreme floods, and earthquakes are a major threat.[49] Afghanistan emits 30.7 metric tons of carbon dioxide equivalent, which constitutes 0.1% of GHG emissions globally.[50] Afghanistan is highly susceptible to natural

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44. *Id.*
45. *Id.*
46. *Id.*
47. *Afghanistan and Environmental Challenges*, DAILY OUTLOOK AFG. (Nov. 28, 2015), http://outlookafghanistan.net/national_detail.php?post_id=13732 [https://perma.cc/R8MA-583S].
48. SÖNKE KREFT ET AL., GERMANWATCH, GLOBAL CLIMATE RISK INDEX 2016, at 7 (2015), https://germanwatch.org/fr/download/13503.pdf [https://perma.cc/B674-3MKE].
49. ISLAMIC REPUBLIC OF AFG., INTENDED NATIONALLY DETERMINED CONTRIBUTION: SUBMISSION TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE 2 (2015), http://www4.unfccc.int/ndcregistry/PublishedDocuments/Afghanistan%20First/INDC_AFG_20150927_FINAL.pdf [https://perma.cc/4Y6W-GTQC] [hereinafter AFG. INDC].
50. *Afghanistan*, CAIT CLIMATE DATA EXPLORER, http://cait.wri.org/profile/Afghanistan (last visited Jan. 19, 2017) (listing Afghanistan's annual metric ton carbon dioxide equivalent); *see* Johannes Friedrich & Thomas Damassa, *The History of Carbon Dioxide Emissions*, WORLD RESOURCES INST. (May 21, 2014), http://www.wri.org/blog/2014/05/history-carbon-dioxide-emissions [https://perma.cc/87B3-7TDR] (giving the global annual metric ton carbon dioxide equivalent).

disasters throughout its 34 provinces.[51] As a result of climate change, it is anticipated that the incidences of extreme weather events, including heat waves, floods, and droughts, will likely increase as will climate-change-related disasters, such as glacial lake outflows.[52] More than 80% of Afghanistan's population relies directly or indirectly on the available natural resources for their livelihoods,[53] so with these climatic changes, the foundation of the country's economy, stability, and food security is under threat.[54]

The people of Afghanistan are not well aware of the adverse effects of GHGs, and yet, they contribute to these emissions. According to the World Bank Databank for the years 2009, 2010, and 2011, GHG emissions have been increasing in Afghanistan, rising from 0.2, to 0.3, and finally to 0.4 metric tons per capita respectively.[55] While Afghanistan is not one of the major polluters today, with the likely increase in industry and productivity that may result from globalization and rule-of-law efforts, it has the opportunity to act preemptively to ensure that its law and policy represents a higher standard of global consciousness and environmental stewardship.[56] In a sense, Afghanistan is in a position to ensure that it never pollutes on the level of some of the world's major polluters.

With that goal in mind, this section undertakes a critical examination of the current approach to carbon emission control in Afghanistan. In particular, this section first explains how command-and-control regimes work and the prevailing scholarly critiques of that regulatory approach. Next, this section describes Afghanistan's current practices and concludes with a short critique of the current system. Ultimately, this section argues that command and control discourages more progressive approaches to eliminating carbon emissions. Furthermore, it posits that a command-and-control regime is difficult to administer in countries like Afghanistan, where people struggle against the effects of corruption on the rule of law, especially law enforcement.

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51. AFG. INDC, *supra* note 49, at 2.

52. *Id.*

53. Shamim Niazi, *Natural Resources and Peacebuilding: Challenges and Opportunities in Afghanistan*, URGENCE RÉHABILITATION DÉVELOPPEMENT, http://www.urd.org/natural-resources-and [https://perma.cc/662S-6ULJ] (last visited Jan. 17, 2017).

54. AFG. INDC, *supra* note 49, at 2.

55. *CO2 Emissions (Metric Tons per Capita)*, WORLD BANK, http://data.worldbank.org/indicator/EN.ATM.CO2E.PC?locations=AF [https://perma.cc/Z5UG-DLKL] (last visited Jan. 21, 2017).

56. *World Development Indicators: CO2 Emissions per Capita*, WORLD BANK, http://databank.worldbank.org/data/reports.aspx?source=2&series=EN.ATM.CO2E.PC&country= [https://perma.cc/DD6J-GYXS] (last visited Jan. 21, 2017).

A. Afghanistan's Legal System and Climate-Change Governance

Because Afghanistan is best described as a mixed legal system, implementing any statutory scheme or policy requires attention to multiple, complex moving parts. Specifically, its legal system stems from a combination of Sharia law, civil law, and customary law; however, Article 3 in the Constitution clarifies that no Afghan law may contradict the beliefs and provisions of Islam.[57] Afghanistan's Constitution was adopted in June of 2004 with the consensus of the Grand Council (*Loya Jirga*) and signed by former President Karzai accordingly.[58] The Constitution provides the legal, political, and administrative framework for the country. With respect to the environmental legal regime, Article 15 of the Constitution of Afghanistan states the following: "The state shall be obligated to adopt necessary measures to protect and improve forests as well as the living environment."[59] This article formed the basis for establishing Afghanistan's National Environmental Protection Agency (AF NEPA) and adopting Afghanistan's first environmental act.[60]

In 2006, Afghanistan adopted the Environment Law.[61] This legislation had the support of the majority in both the Senate and House of Representatives.[62] The Environment Law provided a framework legislation for environmental law in Afghanistan, covering most of the aspects of environmental law in 82 articles and nine chapters.[63] The Environment Law describes the basic principles, obligations, responsibilities, and procedures associated with the environmental law command-and-control regime. It did not, however, provide a detailed provision regarding air pollution in Afghanistan.

Afghanistan's Environment Law further describes a mechanism for betterment of the environmental conditions in Afghanistan.[64] One of the

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57. QANOONE ASASI JAMHURI ISLAMI AFGHANISTAN [Constitution of the Islamic Republic of Afghanistan] Jan. 26, 2004, ch. 1, art. 3 ("No law shall contravene the tenets and provisions of the holy religion of Islam in Afghanistan.").

58. *Id.* at pmbl.

59. *Id.* at art. 15.

60. *Brief Overview of Administration*, ISLAMIC REPUBLIC AFG. NAT'L ENVTL. PROTECTION AGENCY, http://nepa.gov.af/fa/page/first-page (last visited Jan 17, 2017).

61. Qanoone Mohet Zist Afghanistan [The Environment Law] art. 82, *Official Gazette* 873, 1384 (2006), *translated in Islamic Republic of Afghanistan Environmental Act*, CONVENTION ON BIOLOGICAL DIVERSITY, https://www.cbd.int/doc/measures/abs/msr-abs-af-en.pdf [https://perma.cc/Q2L8-8K2D] (last visited Jan. 17, 2017).

62. *Id.*

63. *Id.*

64. *Id.*

interesting mechanisms in this legislation is the establishment of a coordination committee on both a local and national level.[65]

As a result, and because of the importance of prevention of air pollution overall, this piece of legislation resulted in adoption of the Anti-Air Pollution Act (AAPA). The AAPA was adopted in compliance with Articles 22 and 70(3) of the Environment Law and includes details of air pollution regulations.[66] The AAPA was adopted to regulate air pollution to prevent any harm to the environment or human health as well as regulate the emission of chemicals that harm the global environment.[67] The AAPA addresses air pollution from two different sources: (1) vehicular sources and (2) industrial sources.[68]

This regulation imposed restrictions on the excess amount of air pollution by the sources of air pollution.[69] AAPA functions under the High Commission, head of NEPA as the president of High Commission, and the deputy ministers, as members to this Commission.[70] The mechanism that it prescribes is prevention of excess air-pollution emissions.[71] The regulation functions as the "stick" in the classic "carrot/stick" paradigm, aimed at deterring emitters.[72] Different sanctions are incorporated in Chapter 5 of the AAPA.[73] For instance, in Article 37, it states that if the owner of an industry failed to acquire the permit from AF NEPA and other related entities, the owner shall be fined 200,000 AFN—equivalent to $3,000 USD at the current currency rate.[74] Furthermore, in Article 38, it states that if a firm fails to comply with the permit it obtained for polluting the air or pollutes the air more than allowed under the permit, it shall be fined 150,000 AFN—equivalent to $2,200 USD.[75]

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65. *Id.*

66. Regulation on Decrease and Prevention of Air Pollution art.1, *Official Gazette* 991, 1388 (Afg.).

67. *Id.* at art. 2.

68. *Id.* at art. 4.

69. *Id.* at art. 5.

70. *Id.* at art. 24 (describing the responsibilities and methods of the High Commission under the AAPA).

71. *Id.* at ch. V (explaining the possible sanctions if the emission is exceeded).

72. *Id.* at ch. 5; *see also* Peter May, *Social Regulation*, *in* THE TOOLS OF GOVERNMENT: A GUIDE TO THE NEW GOVERNANCE 156, 157 (Lester M. Salamon ed., 2002) (analogizing government oversight as a "stick" used to ensure compliance with social regulations).

73. Regulation on Decrease and Prevention of Air Pollution ch. 5, *Official Gazette* 991, 1388 (Afg.).

74. *Id.* at art. 37(2); *see also XE Currency Converter: AFN to USD*, XE, http://www.xe.com/currencyconverter/convert/?Amount=200%2C000&From=AFN&To=USD (last visited Apr. 23, 2017) (converting the Afghan Afghani to the U.S. Dollar).

75. Regulation on Decrease and Prevention of Air Pollution art. 37(2), *Official Gazette* 991, 1388 (Afg.); *see also XE Currency Converter: AFN to USD*, XE,

The sanctions provided in the AAPA are inadequate when a firm contributes only to the emission of pollutants in the air. The costs of not complying are too small, and as a result, it is highly unlikely that a firm will find the necessary incentive to reduce emission of GHGs.

Against this backdrop of domestic law, Afghanistan signed the UNFCCC on June 12, 1992, as a Non-Annex I party.[76] However, due to civil war and other internal issues, Afghanistan did not ratify the UNFCCC until September 19, 2002, during the establishment of the new political regime in Afghanistan.[77] Afghanistan also participated in the meetings of the IPCC and undertook to adopt and implement a system to prevent the emission of GHGs.[78] Recently, prior to the adoption of the Paris Agreement at COP21, Afghanistan submitted its GHG reduction contribution report and undertook to reduce the emission of GHGs to 13.6% by 2030 compared to the Business as Usual Index.[79]

B. Administrative Apparatus of Environmental Functions in Afghanistan

The AF NEPA was established in 2004 for the purpose of management, structure, supervision, and enforcement of environmentally related functions.[80] AF NEPA was established to fulfill needs of the Ministry of Water Resources of Afghanistan.[81] Article 3 of the Environment Law identifies AF NEPA as the appropriate apparatus for enforcing the rules and regulations that protect the environment.[82] AF NEPA functions under the concept of chain and command with a different hierarchy of offices under its structure.[83] AF NEPA has 24 divisions in 24 provinces of Afghanistan

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http://www.xe.com/currencyconverter/convert/?Amount=150%2C000&From=AFN&To=USD (last visited Apr. 23, 2017) (converting the Afghan Afghani to the U.S. Dollar).

76. *Status of Ratification of the Convention*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php [https://perma.cc/QD94-2ZDL] (last visited Feb. 19, 2017).

77. *See Afghanistan*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/tools_xml/country_AF.html [https://perma.cc/63AF-F32T] (last visited Jan. 21, 2017) (detailing Convention ratification in September of 2002); *cf. Afghanistan Profile - Timeline*, BBC NEWS (Nov. 21, 2016), http://www.bbc.com/news/world-south-asia-12024253 [https://perma.cc/D56D-KTZY] (chronicling the political climate in Afghanistan).

78. United Nations Framework Convention on Climate Change art. 3, May 9, 1992, 1771 U.N.T.S. 107 [hereinafter UNFCCC].

79. AFG. INDC, *supra* note 49, at 1.

80. The Environment Law art. 9, *Official Gazette* 873, 1384 (Afg.).

81. David A. Taylor, *Policy: New Environment Law for Afghanistan*, NAT'L CTR. FOR BIOTECHNOLOGY INFO. (Mar. 2006), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1392251/ [https://perma.cc/9EP3-76DU].

82. The Environment Law art. 3, *Official Gazette* 873, 1384 (Afg.).

83. *See Divisions*, ISLAMIC REPUBLIC AFG. NAT'L ENVTL. PROTECTION AGENCY, http://nepa.gov.af/fa/page/divissions [https://perma.cc/9LKH-Q7CV] (last visited Jan. 24, 2017) (listing AF NEPA's divisions).

that function under the same mandate as AF NEPA, but in local jurisdictions only.[84]

In 2010, AF NEPA established the division of climate change and adaptation.[85] The Climate Change and Adaptation Division employs 16 experts who are divided into four different sub-committees.[86] The committees are as follows: (1) the committee to reduce the adverse effects of climate change; (2) the adaptation committee to climate change; (3) the committee of GHG emission reduction; and (4) the committee to report the climate-change situation to UNFCCC.[87] The purpose of this division is to provide drafts, strategies, and methods to combat the effects of climate change in Afghanistan and to promote compliance with the UNFCCC, Kyoto Protocol, and other related protocols to which Afghanistan is a party.[88]

C. Command-and-Control Regimes and Their Disadvantages

Command and control describes a system based on rules and regulations; therefore, some have favored it for the sake of simplicity and realism.[89] From the beginning of the environmental protection movement in the 1970s until recently, this system was the first point of focus for the international community because of familiarity.[90]

In typical command-and-control systems, the functions of entities and organs are decided by rules and regulations.[91] This system of governance is also called the traditional method, which again, gives a stick to the government to compel the people to obey the rules adopted by the

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84. Brussels UNEP, *UNEP Helped to Establish Afghanistan's National Environmental Protection Agency (NEPA)*, EUR. COMMISSION (Jan. 16, 2015, 4:46 PM), http://capacity4dev.ec.europa.eu/unep/blog/unep-helped-establish-afghanistans-national-environmental-protection-agency-nepa [https://perma.cc/QQU7-THHR].

85. *Head of Climate Change Adaptation*, ISLAMIC REPUBLIC AFG. NAT'L ENVTL. PROTECTION AGENCY, http://nepa.gov.af/fa/page/divissions/division-of-natural-heritage-protection# [https://perma.cc/U9MS-S3UL] (last visited Jan. 17, 2017).

86. *Id.*

87. *Id.*

88. *Id.*

89. *See generally* Daniel Cole & Peter Grossman, *When Is Command-and-Control Efficient? Institutions, Technology, and the Comparative Efficiency of Alternative Regulatory Regimes for Environmental Protection*, 1999 WIS. L. REV. 887–903, 935–38 (1999) (demonstrating the advantages of command-and-control systems).

90. *Command-and-Control Regulation*, KHAN ACAD., https://www.khanacademy.org/economics-finance-domain/microeconomics/consumer-producer-surplus/environmental-regulation/a/command-and-control-regulation-cnx (last visited Apr. 23, 2017); *see also* May, *supra* note 72, at 157 (explaining how this type of regulation is typically used in to regulate the environment).

91. *Command-and-Control Regulation*, *supra* note 90.

authority.[92] The purpose of social regulations is to restrict the behavior that threatens public health, safety, welfare, or wellbeing—for example, behavior that produces environmental pollution or affects the safety of a working environment.[93]

As a system of governance, command and control is common around the world, and it is little wonder that several of Afghanistan's environmental laws have adopted this structure.[94] Still, the regulations vary considerably in what they require or prohibit.[95] Some regulations merely require individuals or firms to supply information to other sectors or concerned entities.[96] For example, the newly adopted Nuclear Energy Law requires that, in emergency situations, Afghanistan is responsible for informing the International Atomic Energy Agency about an emergency.[97] This includes the place that might be at risk of being exposed to adverse effects of a nuclear incident.[98]

Some regulations require the governed to follow specific processes. For example, to obtain a permit for recycling, an applicant must apply to AF NEPA.[99] Finally, some regulations might prohibit engaging in certain activities. For instance, polluting the air is prohibited under the AAPA.[100]

Command-and-control regimes typically share the following characteristics: (1) they have rules that govern expected behaviors; (2) they promulgate standards that serve as benchmarks for compliance; (3) they apply sanctions for noncompliance with the rules; and (4) they have an administrative apparatus that enforces the rules and administers sanctions.[101] The rules generally specify certain actions that are allowed to take place or prohibited from being implemented.[102] These rules set standards for compliance, which is assessed with respect to date and process: acknowledging which actions were completed, to what extent they adhered to the imposed standards, or both.[103] In his book, *Social Regulation, Tools of Government: A Guide to the New Governance*, Peter May notes that in order to ensure compliance, the threat of consequences

92. May, *supra* note 72, at 157.
93. *Id.*
94. *Id.*
95. *Id.* at 159.
96. *Command-and-Control*, *supra* note 90.
97. Qanoone Energy Hastawi [Nuclear Energy Law] art. 32, *Official Gazette* 1182, 1394 (2015) (Afg.).
98. *Id.*
99. The Environment Law art. 34–36, *Official Gazette* 873, 1384 (Afg.).
100. Regulation on Decrease and Prevention of Air Pollution art. 5, *Official Gazette* 991, 1388 (Afg.).
101. May, *supra* note 72, at 158.
102. *Id.*
103. *Id.*

for noncompliance must be adopted, including sanctions imposed through the regulations themselves.[104] He also explains that in order to achieve the purpose of the regulation, an administrative apparatus must control and monitor compliance and carry out enforcement.[105]

Despite the popularity of command-and-control legislation, many scholars and experts have criticized command-and-control systems, finding that they discourage innovation or changes to the way industry approaches the problem of pollution.[106] Further, assuming that the regulations are efficient, command-and-control systems might draw accusations of unfairness from polluting firms.[107] This is because if a firm unfairly emits GHGs and is charged fines or sanctioned by the government, there is no way for the shareholders to know that the firm is a major emitter of GHGs.[108] The command-and-control system does not provide a mechanism to inform the current shareholders or other people who are willing to invest in such firms of the firm's violations regarding GHG emission.

In addition to the aforementioned criticisms, there are additional barriers to the effectiveness of command-and-control regimes in Afghanistan. This includes the lack of rule of law, corruption, failure in both capacity and will by law enforcement entities, and lack of compliance by industries. The Afghan rule-of-law index indicates the gap in effectiveness as an important concept in the country. If the country does not have efficient rule of law, it is very hard to achieve the target for emission reduction. In addition, Afghanistan is currently in a situation where, even with rules, the enforcement of the rules is a very big concern. In the current era, with the enforcement apparatus, the enforcement of rules is seriously impaired by corruption, among other problems.[109] Hypothetically, if a firm produces an excess amount of GHGs, it could bypass the laws by bribing the authorities and cleaning its name off the violators list. Furthermore, firms and individuals have generally lost their faith in the effectiveness of government; they think non-compliance is easier to manage.[110]

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104. *Id.*

105. *Id.*

106. *See, e.g.*, Robert N. Stavins, *Experience with Market-Based Environmental Policy Instruments* 1–2 (Res. for the Future, Discussion Paper No. 01-58, 2001) (critiquing command-and-control regulation).

107. May, *supra* note 72, at 159.

108. *Id.* at 160.

109. U.N. OFFICE ON DRUGS & CRIME, CORRUPTION IN AFGHANISTAN: RECENT PATTERNS AND TRENDS 5 (2012), https://www.unodc.org/documents/frontpage/Corruption_in_Afghanistan_FINAL.pdf [https://perma.cc/Z6LC-WYPU].

110. *Id.* at 23.

Afghanistan is one of the poorest countries in the world, lacking adequate revenue to not only compensate government workers in such a way that prevents them from being susceptible to bribes, but also to pay for the governmental systems that the law creates.[111] Afghanistan's economy relies heavily on the foreign aid revenue for its domestic development funds.[112] Almost 70% of Afghanistan's budget is funded by international aid.[113] This reliance is mostly because Afghanistan lacks sufficient revenue to fund its developmental projects.[114] Command-and-control systems do not sell emissions permits to the regulated entities; thus, the companies emit without compensating the government. In other words, the price of carbon in Afghanistan is free at the moment. Considering all of the above, it is safe to say that command and control is not working well in Afghanistan.

III. MODERN APPROACH TO GOVERNANCE OF GREENHOUSE-GAS EMISSIONS

For reducing GHGs, there are different systems of governance that have been promulgated that appear to be more helpful than command and control. Among these, cap and trade stands out as the one that the international community has begun to favor. The cap-and-trade system is widely practiced in the EU, and the Kyoto Protocol also recommends this system.

This section addresses the promise of and likely challenges that would arise by implementing a cap-and-trade system for controlling GHG emissions in Afghanistan. First, it explores the theoretical roots of emissions-trading regimes. Next, it explores the implementation of emissions-trading systems (ETS) in other countries, with a particular emphasis on the EU's Emissions-Trading Scheme (EU ETS) for GHGs. Finally, it analyzes whether an ETS could be a viable approach for Afghanistan.

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111. *The World Fact Book: Afghanistan*, CENT. INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/the-world-factbook/geos/af.html [https://perma.cc/CMA4-QWND] (last visited Mar. 11, 2017); Jessica Donati & Hamid Shalizi, *UN Investigation Finds Corruption in Afghan Police Oversight Division*, REUTERS (Apr. 19, 2015, 2:56 AM), http://www.reuters.com/article/us-afghanistan-corruption-idUSKBN0NA06C20150419 [https://perma.cc/F956-4V55].

112. *World Donors Pledge $15 Billion for Afghanistan*, AL JAZEERA (Oct. 5, 2016), http://www.aljazeera.com/news/2016/10/afghanistan-aid-donors-pledge-billions-brussels-161005130723718.html [https://perma.cc/X96C-TN9P].

113. *Id.*

114. *Id.*

A. Cap and Trade: Theoretical Roots

Under the emission-trading or cap-and-trade approach, governments set overall emission caps and distribute permits to firms based on those cap; the firms that emit less or more have the ability to sell or buy permits in the market.[115] This approach is driven by market incentives, where the firms will try to buy or innovate new technologies to emit less because economically this approach helps the firm perform better in the long term.[116] Under this approach, the cap should be decreased each year to achieve the GHG reduction goals for a government.[117]

Theories that promulgated the idea of emissions trading harken back to academics from the 1960s,[118] stemming from the principle that the polluter pays. This reflects the economic rule of cost allocation, with externalities being the source of this principle.[119] Externalities are described as the cost of a transaction to a third party, a party that has no control over the transaction.[120] A negative externality can be described as a cost to the external environment.[121]

An example of such externalities can be the release of anthropogenic GHGs into the atmosphere, causing the atmospheric concentration of GHGs to increase, ultimately resulting in climate change.[122] The theory states that the cost of this externality should be allocated to these emissions and borne by its producers.[123] Pigou was the first scholar that recommended a tax system for these externalities.[124] Pigouvian theory suggested adopting a corrective tax because such taxes correct the inequities created when

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115. *See* Stavins, *supra* note 106, at 26–27 (discussing the operation of a cap-and-trade program in the EU for ozone-depleting substances).

116. *How Cap and Trade Works*, ENVTL. DEF. FUND, https://www.edf.org/climate/how-cap-and-trade-works [https://perma.cc/Y7KJ-RTQ3] (last visited Jan. 12, 2017).

117. *Id.*

118. SANJA BOGOJEVIĆ, EMISSIONS TRADING SCHEMES: MARKETS, STATES AND LAW 5 (2013).

119. Brian J. Preston, *Sustainable Development Law in the Courts: The Polluter Pays Principle*, N.S.W. LAND & ENV'T COURT 2 (2009), http://www.lec.justice.nsw.gov.au/Documents/preston_the%20polluter%20pays%20principle.pdf [https://perma.cc/PG4P-MHL3].

120. *Environment: Assessing the Real Costs of "Externalities,"* EARTHTALK (Dec. 8, 2010), http://business-ethics.com/2010/12/08/environment-assessing-the-real-cost-of-externalities/ [https://perma.cc/ZBV7-JHTT].

121. *Id.*

122. *Id.*

123. FELICITY DEANE, EMISSIONS TRADING AND WTO LAW: A GLOBAL ANALYSIS 12 (2015).

124. *Arthur Cecil Pigou*, LIBR. ECON. & LIBERTY, http://www.econlib.org/library/Enc/bios/Pigou.html [https://perma.cc/J469-K48Y] (last visited Jan. 18, 2017).

industry uses resources for free and cause the price of production to be closer to the social cost of production.[125]

As Ronald Coase has observed, pollution is the byproduct of production, and the market, rather than the government, can regulate it accordingly.[126] Sanja Bogojevic describes three different models of emissions-control schemes: (1) economic efficiency; (2) private property rights; and (3) command-and-control models.[127] Economic efficiency is related to internalizing the external costs of environmental degradation.[128] The private-property-rights model stems from the idea that resources belong to no one, thus everyone is exploiting them; hence, property should be assigned to private actors, and those actors should let the market decide how to control the resources.[129] Finally, the command-and-control model puts restrictions on resource users.[130] As noted above, the trading scheme is envisioned as an innovative model of regulatory strategy by making it administratively flexible.[131] One other benefit of a trading scheme is that a firm can add to its units by buying them or using other methods.[132]

B. The Mechanics of Emissions Trading

To create a trading market, the key step is to create the object that can be traded within that market.[133] When assigning value to carbon emissions within a market, governments should consider setting higher prices in order to encourage the regulated parties to reduce carbon emissions rather than pay the higher prices because abatement is less expensive than emitting.[134] In order to achieve this goal, an ETS influences market forces by enabling the price of GHG emissions to be traded on an open market. Emissions are represented by a prescribed unit.[135]

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125. RICHARD A. IPPOLITO, ECONOMICS FOR LAWYERS 240 (2005).

126. *See* R. H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960) (arguing that high transaction costs then make nuisance issues more likely and that if there were lower transaction costs, nuisance issues would resolve naturally, indicating that the role of government is to reduce transaction costs).

127. BOGOJEVIĆ, *supra* note 118, at 20.

128. *Id.*

129. *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1243 (1968) (discussing the causes of resource overexploitation).

130. BOGOJEVIĆ, *supra* note 118, at 20.

131. *Id.*

132. DEANE, *supra* note 123, at 14.

133. *Id.*

134. Rosemary Lyster, *Chasing Down the Climate Change Footprint of the Public and Private Sectors: Forces Converge - Part II*, 24 ENVTL. & PLAN. L.J. 450, 452 (2008).

135. MICHAEL BOTHE & ECKARD REHBINDER, CLIMATE CHANGE POLICY 104 (2005).

The concept of ETS was initially developed for the purpose of trading units and credits in the open market, which is associated with the right to emit GHGs.[136] An ETS generally requires a target (cap) and units (tradable), and an authority assigns units to the regulated parties through allocation or through an auction run by that authority.[137] The effectiveness of these allowances depends on the price for allocation of the permits, meaning that when the price of mitigation is less than the price of buying units, it is more effective than the other way around.[138]

A shared feature of a cap-and-trade ETS is the mechanism to create a market for trading the credits or units.[139] This mechanism creates the market to buy and sell the permits distributed by a regulatory body or generated by a GHG emissions-reduction project.[140] The market created by the cap and trade can be categorized into two different types: (1) regulated markets and (2) voluntary markets.[141] Regulated markets result from mandatory reductions of emissions.[142] Voluntary markets are not regulated by any legal framework, meaning that participation is not mandatory through any governmental agency.[143]

In voluntary markets, the participants are similar to those of regulated markets.[144] The participants in voluntary markets are companies, governments, organizations, organizers of international events, and individuals.[145] As opposed to regulated markets, participants in voluntary markets have the desire to take responsibility and act to mitigate the adverse effects of climate change by voluntarily purchasing the carbon offsets.[146] These offsets are mostly purchased from entities that invest in an offset project and earn credit to sell it to bigger companies.[147] Both regulated markets and voluntary markets form the platform to trade carbon units or credits.[148] This article focuses on regulated markets over voluntary markets because Afghanistan currently has no platform for trading carbon, and it will be vital to institutionalize the market. After the institution is established and tested, voluntary markets would have a better chance of success.

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136. *Id.*
137. *Id.*
138. *Id.* at 105.
139. DEANE, *supra* note 123, at 14.
140. RICARDO BAYON ET AL., VOLUNTARY CARBON MARKETS: AN INTERNATIONAL BUSINESS GUIDE TO WHAT THEY ARE AND HOW THEY WORK 3 (Ricardo Bayon et al. eds., 2007).
141. DEANE, *supra* note 123, at 15.
142. *Id.*
143. *Id.*
144. *Id.*
145. *Id.*
146. BAYON ET AL., *supra* note 140, at 5.
147. *Id.*
148. *Id.*

C. Tradeable Instruments of Cap and Trade

Markets exist for the purpose of trade.[149] The "object" of the trade enables the trade; without the object of the trade, the market will not exist.[150] However, the object can exist independently of markets.[151] The central object of an ETS is a tradable instrument that represents a set of quantities of GHG emissions.[152] The instruments are the core features of any ETS.[153] Thus, carefully designing the instrument is critical to the overall legal and financial architecture of these schemes.

There are different labels used for tradable instruments, such as emission units, emission credits, and emission permits.[154] The most common of these are emission units.[155] Emission units are the core feature of the cap-and-trade system designed to allocate a specific quantity of GHGs from the government or other related authorities to mitigate climate-change affects.[156] Emission units are distributed either by free allocation or by auction.[157] By tracking these units, the government can monitor emissions of GHGs from a specific firm.[158] Furthermore, it is through this restriction that the target of mitigation is set by governments.[159] Additionally, it is essential that these units have legal features to ensure their participation in the market.[160] The reason for this approach is to enable these units to be transferable between entities.[161]

Another tradable instrument is emission credits.[162] With credits, if the entity funds a project, the amount of reduced emissions can be turned into

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149. *See id.* at 3 (describing the theory behind carbon markets).
150. *See id.* (stating the purpose of turning units of pollution into units of property).
151. *Id.* at 4.
152. *Id.*
153. *See generally id.* (describing the structure of emissions trading).
154. *Id.* at 4–7.
155. *Id.* at 7.
156. *Carbon Pricing Watch 2016*, WORLD BANK GRP. 1, 8–10 (2016), https://openknowledge.worldbank.org/bitstream/handle/10986/24288/CarbonPricingWatch2016.pdf?sequence=4&isAllowed=y [https://perma.cc/2LCD-4GNF]. The Australian Carbon Pricing Mechanism refers to the unit of trade as carbon units, and the European Union Emission Trading Scheme refers to unit as allowances. *Id.*
157. James P. Barrett, *Arguments for Auctioning Carbon Permits*, ECON. FOR EQUITY & ENV'T (Apr. 2009), http://e3network.org/wp-content/uploads/2015/04/Barrett_Arguments_for_Auctioning_Carbon_Permits.pdf [https://perma.cc/26FD-5L5K].
158. DEANE, *supra* note 123, at 17.
159. *Id.*
160. *Id.*
161. *Id.*
162. *Id.*

credits, and the entity would be entitled to sell those earned credits.[163] Through this mechanism, the credit holder takes those credits to the validators, then the verifiers, and finally the new entity owns the credits.[164] Carbon credits have created a billion-dollar business around the world.[165] However, the process of obtaining these credits is not as easy as it sounds because the procedure to obtain approval for the newly generated credits is so complex.[166] The generation of emission credits requires specificity in the legal framework for a particular methodology of a project.[167] In addition, these units require approval from certifiers and verifiers.[168]

The third tradable instrument is emission permits. A permit is defined by the Oxford English Dictionary as "an official document giving permission to do something."[169] A permit is necessary when an act is normally prohibited, but permission can be acquired through a permit process. Within the EU ETS, the emission of GHGs is prohibited, and a permit is required to expel any emissions.[170]

D. Emissions Trading System Under International Law

International law is a permissive system, such that unless something is strictly prohibited, states are permitted to behave in a manner that satisfies them.[171] International law imposes duties on the international community to respect the *res communis*.[172] *Res communis* is defined as the area beyond the national jurisdiction of countries, such as high seas and outer space.[173] Over the past decade, numerous ETSs have been adopted.[174]

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163. Jeff Coelho, *Global Carbon Market Value Rises to Record $176 Billion*, REUTERS (May 30, 2012, 11:36 AM), http://www.reuters.com/article/us-world-bank-carbon-idUSBRE84T08720120530 [https://perma.cc/K6J4-3428].

164. DEATHERAGE, *supra* note 13, at 23

165. *Id.*

166. *Id.*

167. *About the Mechanism*, CLEAN ENERGY REGULATOR (May 11, 2015), http://www.cleanenergyregulator.gov.au/Infohub/CPM/About-the-mechanism [https://perma.cc/43ZB-8SVP]. For example, Australian Carbon Pricing Mechanism has some limitation to surrender carbon credit units during the fixed price of carbon. *Id.*

168. *Tüv Nord Cert – Validation, Verification and Certification of JI/CDM Projects*, TÜV NORD CERTIFICATION, https://www.tuev-nord.de/fileadmin/Content/Global/TUEV_NORD_Archiv/pdf/pdb-jicdm-0509.pdf [https://perma.cc/43ZB-8SVP] (last visited Feb. 19, 2017).

169. *Permit*, OXFORD DICTIONARY (2d ed. 1991).

170. SCHOENBAUM & YOUNG, *supra* note 3.

171. The Case of the S.S. Lotus (Fr. v. Turk.), Judgement, 1927 P.C.I.J. (ser. A) No. 10, at 18-19 (Sept. 7).

172. DEANE, *supra* note 123, at 18.

173. *Id.*

174. *Id.*

In the 1960s, the United States was the first country to introduce an ETS with its sulfur dioxide reduction plan.[175] The sulfur dioxide plan was introduced to reverse the effects of acid deposition through an emission allocation and transfer program.[176] This plan started by capping the emission of sulfur dioxide from coal-fired power plants and expanded to incorporate more corporations and areas.[177] This plan influenced the international community and shaped the international climate-change regime under international law.[178]

1. The Kyoto Protocol

Under international law, emission control through cap and trade began with the adoption of the Kyoto Protocol (KP).[179] The primary purpose of the KP was to prevent the anthropogenic emissions of GHGs.[180] With this regulatory scheme, the KP established different methods of credits and units for developed countries to meet their targets of GHG emissions.[181] Each unit and credit has a distinguished characteristic in their nature.[182] There are different types of emission units and credits created by the KP.[183] It is important to understand the difference between each unit and credit to continue with a trade scheme.

a. Assigned Amount Units

The KP emission limitations and regulations have led to the creation of Assigned Amount Units (AAUs).[184] All Annex I states, or developed nations, received a certain amount of AAUs in compliance with their legal obligations under the KP.[185] Each AAU corresponded to the emission of the equivalent of one ton of carbon dioxide.[186] Carbon dioxide equivalent is a measure used to compare the emissions from various GHGs based on their

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175. *Id.*
176. *Id.*
177. *Id.*
178. *Id.*
179. Kyoto Protocol, *supra* note 1, at 33.
180. *Id.*
181. *Id.* at 33, 35, 38, 40.
182. DEANE, *supra* note 123, at 20.
183. Kyoto Protocol, *supra* note 1, at 33, 35, 38, 40.
184. *Id.* at 33.
185. *Id.*
186. *Glossary of Climate Change Acronyms and Terms*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/glossary/items/3666.php [https://perma.cc/YDX4-FLQG] (last visited Jan. 18, 2017).

global-warming potential.[187] For example, the global-warming potential for methane is measured as 21 over 100 years.[188] This means that emissions of one million metric tons of methane is equivalent to the emission of 21 million metric tons of carbon dioxide. These allowances do not mean that the country has gained a right over the atmosphere, but it is merely a permit to emit a specific amount.[189]

b. Certified Emission Reductions

The tradable instrument created by the flexibility mechanisms of the KP includes Certified Emission Reductions (CERs).[190] CERs are those GHG credits that are issued by the Clean Development Mechanism (CDM) of the KP.[191] Under the CDM, Annex I states implement a reduction project in a developing country to receive a credit.[192] The purpose of CER projects is to promote sustainability within developing countries; at the same time, it is intended to enable developed nations to achieve their emission target under the KP.[193] Under the KP, there are a number of requirements that must be satisfied in order to earn CER credit through the CDM.[194] Certification from the CDM requires a showing that emission reductions exceed what would have resulted if the project were not implemented.[195] Other restrictions are imposed on CERs, depending on the type of CERs. For instance, any CDM project that comes out of afforestation and reforestation activities, receive either temporary CERs (tCERs) or long-term CERs (lCERs).[196] These credits do not have the same legal characteristics as general CERs.[197]

187. Dolf Gielen & Tom Kram, The Role of Non-CO_2 Greenhouse Gases in Meeting Kyoto Targets (1998) (unpublished paper), https://www.oecd.org/dev/1923119.pdf [https://perma.cc/YHH5-5TXW].

188. DEATHERAGE, *supra* note 13, at 23.

189. DEANE, *supra* note 123, at 21.

190. Kyoto Protocol, *supra* note 1, 38 (agreeing not to buy AAUs from the first commitment period of Kyoto, such as Australian, the EU, Japan, Liechtenstein, Monaco, Norway, and Switzerland).

191. *Id.*

192. *Id.*

193. NICOLA DURRANT, LEGAL RESPONSES TO CLIMATE CHANGE 50 (2010).

194. Kyoto Protocol, *supra* note 1, at 38.

195. DURRANT, *supra* note 193, at 52.

196. DEANE, *supra* note 123, at 22.

197. *Id.*

c. Emission Reduction Units

Reduction units result from joint implementation projects that generate Emission Reduction Units (ERUs).[198] This instrument features a reduction project implemented by one Annex I country with another Annex I country.[199] The party that implements this kind of project is the owner of the emission reductions generated.[200] ERUs are also carbon credits, but unlike CERs, they are not additional credits.[201] In order to generate ERUs, the host country of a joint-implementation project must cancel either an AAU or a Removal Unit.[202] The host country shall subsequently transfer the generated ERU to the country that implemented the project.[203] Similar to CDM projects, joint-implementation projects have regulatory barriers.[204] However, developed nations typically do not accept such projects because they want the AAUs for themselves rather than transferring them to another developed nation.[205]

d. Removal Units

A Removal Unit (RMU) instrument is issued by developed countries when they engage in land-use, land-use-change, and forestry (LULUCF) activities.[206] RMUs can be issued in addition to their AAUs, which will further assist the developed nations in meeting their targets.[207] The KP requires developed nations to create a scientific entity to evaluate the 1990 base line of GHG emissions.[208] If there is a LULUCF project implemented by the country, the committee needs to verify the project and should be transparent.[209] This process will create new types of units for the country, and developed nations can trade them like other types of units.[210]

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198. Kyoto Protocol, *supra* note 1, at 35.
199. *Id.*
200. *Id.*
201. DURRANT, *supra* note 193, at 56.
202. Kyoto Protocol, *supra* note 1, at 35.
203. *Id.*
204. *Id.*
205. DURRANT, *supra* note 193, at 58.
206. Kyoto Protocol, *supra* note 1, at 33.
207. *Id.*
208. *Id.*
209. *Id.*
210. DEATHERAGE, *supra* note 13, at 45.

2. The European Union

The EU provides a good example of how an ETS works in practice. While this article does not attempt to provide the intricate details of each country's experience with ETS nor does it detail all aspects of the EU cap-and-trade system, a basic discussion of the EU system gives some context to discussions about how to develop cap-and-trade programs.

First, the EU operates the most ambitious GHG ETS in the world.[211] The EU ETS was adopted in 2005, and it includes all 28 EU countries as well as Iceland, Liechtenstein, and Norway.[212] As mentioned, the EU ETS was initially established by an EU Directive in 2005.[213] This directive was subsequently amended by other directives.[214] This scheme was designed to allocate the allowances by the obligations undertaken through the KP.

Each member of the EU implements the EU ETS through National Allocation Plans (NAPs) under EU law;[215] however, NAPs have not been implemented since 2013.[216] The EU ETS has been proceeding in three different phases; the third phase began in 2013 and is set to continue through 2020.[217] Initially, the EU ETS covered only carbon dioxide; however, in 2013, several nitrous oxide emissions were added to the list.[218]

The regulated parties are stationary installations, including combustion plants, oil refineries, coke ovens, iron and steel factories, and factories making cement, glass, lime, brick, ceramics, pulp, and paper.[219] There are approximately 13,000 installations under the EU ETS, and a cap is set for carbon dioxide and nitrous oxide.[220] In addition, EU ETS has a linear decrease of 1.74% in emissions per year.[221] The installations covered by the EU ETS comprises approximately 43% of the GHG emissions in the EU because economic centers are not covered under this system, such as

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211. SCHOENBAUM & YOUNG, *supra* note 3.

212. *Id.*

213. Directive 2003/87/EC, of the European Parliament and of the Council of 13 October 2003 Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community and Amending Council Directive 96/61/EC, 2003 O.J. (L 275) 32, 32.

214. *See* Directive 2004/101/EC, of the European Parliament and of the Council of 27 October 2004 Amending Directive 2003/87/EC Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community, in Respect of the Kyoto Protocol's Project Mechanisms, 2004 O.J. (L 338) 18, 18 (amending a previous directive establishing a GHG ETS).

215. SCHOENBAUM & YOUNG, *supra* note 3.

216. Directive 2009/29/EC, of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading Scheme of the Community, 2009 O.J. (L 140) 64, 63.

217. SHOENBAUM & YOUNG, *supra* note 3.

218. *Id.*

219. DEANE, *supra* note 123, at 22.

220. SHOENBAUM & YOUNG, *supra* note 3.

221. *Id.*

transportation.[222] Releasing emissions is prohibited under EU law, meaning that the member states must acquire permits in order to emit.[223] EU ETS permits have a reporting and monitoring requirement and is reviewed every five years.[224] In addition to holding a permit, the firm is required to surrender at least some amount of its permits at the end of year.[225] Emission units under EU ETS are called EU Allowances (EUAs).[226]

In a recent amendment to the directives, all the tradable instruments were categorized as financial instruments.[227] These allowances were deemed transferable, and as such, they create market incentives to minimize emissions by reducing emission control costs.[228] Regulated firms have the discretion to abate their emissions.[229] Article 12 of the directive also states that the allowances would be cancelled once surrendered.[230] With respect to EUAs, there is no different qualification than the ordinary units previously stated, which is generally standard in other ETSs.[231]

IV. SUGGESTIONS FOR AFGHAN LAW REFORM

A. Benefits of Shifting to Cap and Trade

With its gross domestic product (GDP) per capita of $633 purchasing power parity (ppp) in 2014, Afghanistan is categorized as a lower income country.[232] As such, under the current regime in Afghanistan, increasing revenue for development should be a priority. Since 2001, 70% of Afghanistan's budget is being funded by foreign aid,[233] but creating new, independent revenue streams is becoming increasingly feasible. Afghanistan's government recently began collecting new taxes, for

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222. *Id.*
223. Directive 2003/87/EC, *supra* note 213, at 33.
224. Directive 2009/29/EC, *supra* note 216, at 70, 63.
225. Directive 2003/87/EC, *supra* note 213, at 35.
226. *Id.* at 32 (describing the role of allowances in an ETS).
227. Directive 2014/65, of the European Parliament and of the Council of 15 May 2014 on Markets in Financial Instruments Amending Directive 2002/92/EC and Directive 2011/91/EU Text with EEA Relevance, 2014 O.J. (L 173) 349, 349–50.
228. SHOENBAUM & YOUNG, *supra* note 3.
229. *Id.*
230. Directive 2003/87/EC, *supra* note 213, at 36.
231. DEANE, *supra* note 123, at 27.
232. *World Development Indicators*, WORLD BANK, http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.PCAP.CD&id=af3ce82b&report_name=Popular_indicators&popularype=series&ispopular=y [https://perma.cc/ZC37-95BA] (last visited Jan. 12, 2016).
233. *World Donors Pledge $15 Billion for Afghanistan*, *supra* note 112.

example, 10% of top up balance is deducted as tax.[234] This suggests that the system is eager to generate different fiscal revenues to continue the existence of the government.

Consistent with this effort, shifting to a cap-and-trade regime would create a new stream of revenue for the government. With cap and trade, the government could auction the units to the industries and spend the income to address other issues in Afghanistan. At first, because the units would be adequate for all the industries and other sources, it would generate less revenue; however, with each year, Afghanistan could decrease the cap, and the price of the units would rise, which would enable the country to create substantial revenue for income.

A cap-and-trade system would also help with enforcement because it is essentially self-executing. Under the current regime, Afghanistan lacks sufficient enforcement mechanisms, and what mechanisms exist are compromised by corruption, especially bribing authorities to overlook the rules. Under cap and trade, when the units are auctioned to the market, the market itself will reduce emissions over time because of the market's drive to maximize economic benefit. The principle of supply and demand would balance the market, and individuals will be the overseers or the enforcers of this policy in the country.

Afghanistan's markets are not well developed; however, the nature of competition in business is similar to other international markets. In the author's personal experience, people are eager to innovate to save costs in business procedures. Cap-and-trade systems are famous for encouraging innovations and new technologies that mitigate or reduce emissions. This encouragement comports with the purpose of business, and people will likely innovate for the sake of economic benefit and market competition. Through these methods, Afghanistan's industries can acquire new technology to produce the least amount of GHG emissions into the atmosphere. As such, adopting cap and trade would benefit the economy, the people, and the government, and at the same time, cap and trade would bring Afghanistan into compliance with its obligations to the international community by reducing GHG emissions.

B. Possible Drawbacks and Barriers

Introducing any change to a system of governance can be challenging. With cap-and-trade programs, an adopting government needs to find

234. *Collection of 10 Percent Telecom Service Fees is Secure and Transparent*, MINISTRY COMM. & INFO. TECH. (Oct. 4, 2015), http://mcit.gov.af/en/news/53507.

consensus on implementation, and because this system requires political will to commit to the new program and political leadership to lead and enforce it, it increases the scope of challenges across the country.

In the context of Afghanistan, the decision-makers might not be willing to go through the difficulty of finding that consensus because the government believes it has other, more pressing priorities associated with immediate security and economic growth. However, in the long term, cap and trade could help Afghanistan's economy and could contribute to stability of the government. If the decision-makers had more information about the potential benefits of cap and trade, consensus could be possible. By creating a cap and reducing it each year, the important goal of emission reduction will be easier to achieve. The author does not claim that reducing GHG emissions is more important than security or economic growth; however, the reduction of GHGs through a cap-and-trade system will secure long-term security and generate economic revenue to contribute to the economic growth of Afghanistan. For instance, most of the people who join the insurgents' groups in Afghanistan do so because of the weak economy and the salary that the Taliban pays their members. If the economy of Afghanistan grew, the possibility of joining insurgent groups would decrease dramatically.

Afghan businesses will likely resist a shift to cap and trade because under the current regime, firms are accustomed to functioning in a corrupt system—a system where they do not have to pay the government for their emissions—whereas a cap-and-trade system will require them to spend money to acquire units for their emissions. This drawback could be mitigated by the fact that most of the costs of production and taxes associated with the products are passed on to the consumers. For instance, Darakhshan Plaster Company produces plaster to the market. If the initial cost of the plaster is $75 a pack, an added $7 a pack would be the value-added tax for the carbon emissions charged by the firm. Firms will be willing to pass the cost to the consumers, as long as it does not affect the purchasing power of buyers; and, if the cost increases are high, it will compel industries to innovate new technology to reduce emissions. In the plaster production example, people would be willing to buy the plaster for up to $85; however, if the price of carbon increases more, then the buyers would substitute Darakhshan Plaster with some imported plaster for less. In this case, the companies would be forced to find new methods to emit less carbon dioxide to make their product buyable. This barrier can be overcome through nationwide media coverage, showing that the companies can use this method to make everything work in Afghanistan. The media coverage will foster the public's opinion to stop buying products from the companies unless they agree to the new policy for the betterment of Afghanistan.

Because the current Environment Law sets up a command-and-control system, the change to the governance regime will also require legislative action. And, because environmental issues are currently not a priority for the legislative branch of Afghanistan, there may be resistance to the arduous process of adopting new legislation—legislation that would have a large impact on how firms manufacture and do business. In addition, the legislative branch lacks subject-matter expertise with respect to climate-change problems. Experts could be recruited to help educate the legislature on the important environmental issues and how adopting a cap-and-trade approach could position Afghanistan as a world leader in fighting climate change. Recently, after a private meeting with four members of Parliament, during which this author discussed the current policy regarding climate change and suggested the change, it seemed that the members became very interested in this policy system and asked for more details. After this discussion, it was clear that persuading the Members of Parliament (MPs) would not be a hard task if the system is being explained properly to them. Furthermore, if the MPs are invited to the international conferences where the policy and system is properly explained to them, it would make it easier to overcome this barrier.

CONCLUSION

Even though Afghanistan is landlocked, it is prone to adverse effects of climate change because almost 80% of Afghans are dependent on natural resources—resources that will be severely endangered because of climate change in the region.[235] While Afghanistan emitted only 0.1% of GHGs worldwide, this is actually a high percentage given its size and stage of development; with slight improvements to the development process, Afghanistan is positioned to become one of the major emitters of GHGs.

Currently, Afghanistan's emissions-governance regime is based on a command-and-control design, an approach that does not encourage innovation and that has problems with enforcement and effectiveness. Environmental issues are not the current focus in Afghanistan even with the risk assessment index findings because decision-makers are inadequately informed about the risks of climate change. This governance regime might not be able to contribute to the reduction of GHG emissions.

Recently, a favored governance regime in the international community with regard to emissions control is the cap-and-trade system, such as the

235. INT'L MONETARY FUND, ISLAMIC REPUBLIC OF AFGHANISTAN: INTERIM POVERTY REDUCTION STRATEGY PAPER 26 (2006).

legal regimes in the EU and under the KP. This system would fit well into the context of Afghanistan because it will be a self-executing system through the market mechanism of supply and demand. A cap-and-trade system would encourage innovation in Afghanistan—encouragement that the people and industries in Afghanistan need right now. On balance, the challenges associated with such a dramatic shift in the governance regime seem to pale in comparison to the benefits that the people of Afghanistan, and the planet's climate, have to gain.