

REPORT OF THE FINANCE, TRANSACTIONS AND INVESTMENTS COMMITTEE

This report summarizes developments in international energy law between July 1, 2020, and June 30, 2021.¹

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I. U.S. AND NORTH AMERICA ENERGY SUPPLY AND TRADE DEVELOPMENTS

A. *Biden Administration and Executive Orders Supporting Clean Energy*

President Biden has signed several executive orders to address the increasing threat of climate change and support clean energy technologies since taking office in January 2021. During his campaign, President Biden pledged to ensure the United States achieves net-zero greenhouse gas (GHG) emissions by 2050, with a short-term target of decarbonizing the United States' power sector by 2035.² Throughout his first year in office, President Biden committed the U.S. to rejoining the Paris Climate Agreement,³ and signed several Executive Orders intended to prioritize the administration's clean energy and environmental justice agenda across the federal government.

1. Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis

On January 20, 2021, shortly after his inauguration, President Biden issued Executive Order (EO) 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, which requires all federal agencies and departments to consider climate change and environmental health issues in all federal decision-making, including agency actions taken under the Trump administration.⁴ Accordingly, EO 13990 directs all federal agencies and departments to review, and where appropriate, rescind all energy-related "regulations, orders, guidance documents, policies, [or] other similar agency actions" adopted during the Trump presidency that conflict with national objectives "to improve public health and protect [the] environment."⁵

Specifically, the EO directs executive agencies to *immediately* review rules enacted during the Trump presidency related to: (1) methane emissions in the oil and gas sector; (2) fuel efficiency; (3) building and appliance efficiency; and (4) mercury and air toxics standards for power plants.⁶ Although EO 13990 requires agency heads to conduct an immediate review of these rules, agency decision-making must be consistent with the Administrative Procedure Act's rulemaking procedures, which require notice and public comment.⁷ In addition to the traditional rulemaking process, however, EO 13990 provides that the Attorney General "may, in his discretion, request [a] stay or otherwise dispose of [any pending] litigation" that conflicts with the policies set forth under the EO.⁸

2. BIDEN & HARRIS CAMPAIGN, THE BIDEN PLAN FOR A CLEAN ENERGY REVOLUTION AND ENVIRONMENTAL JUSTICE, JOEBIDEN.COM, <https://joebiden.com/climate-plan/> (last visited Oct. 16, 2021).

3. WHITE HOUSE BRIEFING ROOM, PARIS CLIMATE AGREEMENT (Jan. 20, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/>.

4. Exec. Order No. 13990 of Jan. 20, 2021, 86 Fed. Reg. 7,037, 7,037 (2021) [hereinafter Exec. Order No. 13990].

5. *Id.* at 7,037-38.

6. *Id.* EO 13990 set deadlines between March and September 2021 to complete a review of Trump administration rules that require reconsideration or revision. *Id.*

7. *Id.* at 7,037; *see also* 5 U.S.C. § 553 (1966).

8. Exec. Order No. 13990, *supra* note 4, at 7,039.

In addition to requiring broad agency review of Trump-era administrative rules, EO 13990 directs the Secretary of the Interior to place a moratorium on oil and gas leasing in the Arctic National Wildlife Refuge and reinstates the Obama administration's policy of prohibiting drilling in certain areas of the Arctic waters and the Bering Sea.⁹ The EO also instructs the Attorney General to consider taking actions to stay litigation pending the completion of the Secretary's review.¹⁰

EO 13990 revokes several Trump-era EOs, permits, and presidential memorandums intended to streamline the federal permitting process to increase energy production, including the Keystone XL pipeline presidential permit (discussed in further detail in section I(B)),¹¹ and reinstates the "Interagency Working Group on the Social Cost of Greenhouse Gases" (Working Group).¹² The EO directs the Working Group to develop measures to assess the total cost of GHG emissions for agencies to use to create standards that reduce toxic air emissions.¹³ Once developed, agencies can incorporate such standards to set more stringent rules for issuing federal permits by considering both the environmental and social costs of GHG emissions.¹⁴

2. Executive Order on Tackling the Climate Crisis at Home and Abroad

One week after the issuance of EO 13990, on January 27, 2021, President Biden issued EO 14008, *Tackling the Climate Crisis at Home and Abroad*, which places climate change at the center of U.S. foreign policy and national security; places clean energy and environmental justice at the forefront of federal agency decision-making; and positions the federal government as a market participant in the transition to zero-emissions technology.¹⁵ In addition to announcing the rejoining of the Paris Agreement and committing to hosting a climate summit, the EO creates two administrative bodies to manage climate policy across the federal government and directs them to immediately create an "approach to combat the climate crisis."¹⁶

Notably, EO 14008 establishes a White House Office of Domestic Climate Policy (Climate Policy Office), headed by the Assistant to the President and National Climate Advisor (National Climate Advisor).¹⁷ The EO tasks the Climate Policy Office with coordinating the policy-making process regarding domestic

9. *Id.*

10. *Id.* at 7,039-40.

11. *Id.* at 7,037, 7,041.

12. *Id.* at 7,040. The original Working Group was organized under the George W. Bush administration, with the first "social cost of carbon" metric developed under the Obama administration and subsequently employed in federal rulemaking. In 2017, the Trump administration disbanded the Working Group and sought to discontinue use of the "social cost of carbon" metric. Keith B. Belton & John D. Graham, *Trump's Deregulation Record: Is it Working?*, 71 ADMIN. L. REV. 803, 861-65 (2019).

13. Exec. Order No. 13990, *supra* note 4, at 7,040-41

14. *Id.* at 7,038-41.

15. Exec. Order No. 14008 of Jan. 27, 2021, 86 Fed. Reg. 7,619, 7,622, 7,629 (2021) [hereinafter Exec. Order No. 14008].

16. *Id.* at 7,619, 7,622-23.

17. *Id.* at 7,622.

climate-policy issues and monitoring the “implementation of the President’s domestic climate-policy agenda” to ensure that policy is consistent with the Biden administration’s climate goals.¹⁸ EO 14008 further establishes a National Climate Task Force (Task Force) to support the Climate Policy Office. The Task Force consists of several cabinet secretaries, including the Secretary of Energy and other high-ranking executive officials.¹⁹ The EO authorizes the Task Force to facilitate the “deployment of a Government-wide approach to combat the climate crisis,” including measures “to reduce climate pollution; increase resilience to the impacts of climate change; . . . conserve [national] lands, waters, oceans, and biodiversity; [and] deliver economic justice.”²⁰

Correspondingly, EO 14008 directs several federal agencies to submit to the Task Force a draft action plan to leverage federal procurement to decarbonize the electricity sector by 2035 and replace all “Federal, State, local and Tribal government fleets” with zero-emission vehicles.²¹ The GSA estimates that in 2020, the federal government fleet totaled approximately 658,000 vehicles, with only 3,215 government-owned vehicles being electric.²² EO 14008’s directive to shift federal government procurement towards clean power resources, such as electric vehicles (EVs), could incentivize substantial private sector investments in renewable energy technology and resources necessary to support the transition away from fossil fuels.

EO 14008 further directs the Department of the Interior (DOI) to cease issuing new oil and gas leases, on both public lands and offshore waters, until it completes an internal review of federal oil and gas leasing and permitting practices for fossil fuels, and identifies steps to double energy production from offshore wind by 2030.²³ However, the Biden administration clarifies, in a fact sheet issued alongside the EO, that this directive will not affect existing leases for oil and gas drilling activities.²⁴ The EO also directs federal agencies to “identify opportunities for Federal funding to spur innovation, commercialization, and

18. *Id.*

19. *Id.* at 7,623.

20. Exec. Order No. 14008, *supra* note 15, at 7,623.

21. *Id.* at 7,624. Specifically, the EO directs the Chair of the Council on Environmental Quality (CEQ), the Administrator of General Services (GSA), and the Director of the Office of Management and Budget (OMB), in coordination with the Secretary of Commerce, the Secretary of Labor, the Secretary of Energy, and the heads of other relevant agencies, to assist the National Climate Advisor, through the Task Force in developing a comprehensive plan to stimulate clean energy industries by revitalizing the Federal Government’s sustainability efforts. *Id.* at 7,623.

22. David Shepardson, *Biden Vows to Replace U.S. Government Fleet with Electric Vehicles*, REUTERS (Jan. 25, 2021), <https://www.reuters.com/article/us-usa-biden-autos/biden-vows-to-replace-u-s-government-fleet-with-electric-vehicles-idUSKBN29U2LW>; U.S. GEN. SERV. ADMIN., FEDERAL FLEET REPORT: FY 2020 (May 25, 2021), <https://www.gsa.gov/policy-regulations/policy/vehicle-management-policy/federal-fleet-report>.

23. Exec. Order No. 14008, *supra* note 15, at 7,624-25.

24. WHITE HOUSE BRIEFING ROOM, FACT SHEET: PRESIDENT BIDEN TAKES EXECUTIVE ACTIONS TO TACKLE THE CLIMATE CRISIS AT HOME AND ABROAD, CREATE JOBS, AND RESTORE SCIENTIFIC INTEGRITY ACROSS FEDERAL GOVERNMENT (Jan. 27, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/27/fact-sheet-president-biden-takes-executive-actions-to-tackle-the-climate-crisis-at-home-and-abroad-create-jobs-and-restore-scientific-integrity-across-federal-government/>.

deployment of clean energy technologies and infrastructure” and “eliminate fossil fuel subsidies from [their] budget request[s]” beginning with Fiscal Year 2022.²⁵

With President Biden’s pledge to stimulate further investment and development in clean energy, members of the fossil fuel industry can expect additional regulatory changes that could institute stricter environmental reviews for new oil and gas leases and GHG emission analyses. The Federal Energy Regulatory Commission (FERC) has already taken measures to develop a new process for reviewing natural gas pipeline certificate applications that incorporate the role of GHG emissions. On February 18, 2021, FERC issued a Notice of Inquiry (NOI), seeking comments on whether or not it should evaluate the impact of GHG emissions associated with proposed natural gas pipelines.²⁶ Significantly, on March 22, 2021, FERC issued its first order incorporating the review of “all appropriate evidence regarding the significance of a project’s reasonably foreseeable GHG emissions and those emissions’ contribution to climate change.”²⁷ The incorporation of such considerations by FERC and other agencies into the review and permitting process for granting fossil fuel leases and licenses, could have a substantial effect on domestic oil and natural gas production and transportation.

3. Executive Order on Strengthening America’s Leadership in Clean Cars and Trucks

On August 5, 2021, President Biden issued EO 14037, *Strengthening American Leadership in Clean Cars and Trucks*, which sets a goal to have 50 percent of all new United States sales of passenger cars and light-duty trucks be zero-emission vehicles by 2030.²⁸ According to the Environmental Protection Agency (EPA), gasoline-powered cars and trucks are the largest single source of transportation-related GHG emissions produced in the United States.²⁹ EO 14037 further advances the Biden administration’s priority to tackle climate change and advance environmental justice by encouraging federal agencies to enact more stringent fuel efficiency and GHG emissions standards to accelerate the transition of the nation’s light-duty vehicle fleet toward a zero-emissions future.³⁰

While EO 14037 does not include any binding requirements for federal agencies, it encourages the EPA and Department of Transportation (DOT) to commence work to promulgate new pollution and fuel economy standards for light-, medium-, and heavy-duty vehicles.³¹ The EO further directs the EPA and

25. Exec. Order No. 14008, *supra* note 15, at 7,625.

26. Notice of Inquiry, *Certification of New Interstate Natural Gas Facilities*, 174 FERC ¶ 61,125 at PP 16-17 (2021), 86 Fed. Reg. 11,268 (2021).

27. *Northern Natural Gas Co.*, 174 FERC ¶ 61,189 at P 36 (2021).

28. Exec. Order No. 14037 of Aug. 5, 2021, 86 Fed. Reg. 43,583, 43,583 (2021) [hereinafter Exec. Order No. 14037]. Zero-emission vehicles covered under the EO include “battery electric, plug-in hybrid electric, or fuel cell electric vehicles.” *Id.*

29. U.S. ENVTL. PROT. AGENCY, SOURCES OF GREENHOUSE GAS EMISSIONS, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#transportation> (last visited Oct. 25, 2021).

30. Exec. Order No. 14037, *supra* note 28, at 43,583.

31. *Id.* at 43,583-84.

DOT to consult with the Secretaries of Commerce, Labor and Energy to develop methods “to accelerate innovation and manufacturing in the automotive sector[;] to strengthen the domestic supply chain for that sector, and grow jobs that provide good pay and benefits;” and secure “input from a diverse range of stakeholders, including representatives from labor unions, States, industry, environmental justice organizations, and public health experts.”³² Lastly, EO 14037 directs the EPA to coordinate with California and other states that have adopted standards to reduce vehicle emissions.³³

B. Pressures Facing Pipeline Companies

1. Keystone Pipeline – Revocation of Presidential Permit

EO 13990 formalized the Biden administration’s policy to reduce climate pollution GHG emissions through regulatory and executive action. In furtherance of this policy, EO 13990 revokes a 2019 presidential permit issued to TransCanada Keystone Pipeline, L.P. by President Trump³⁴ for the construction and operation of the Keystone XL Pipeline.³⁵ EO 13990 reiterates the determination made by the Obama administration in 2015 that the “Keystone XL pipeline would not serve the U.S. national interest.”³⁶ By revoking President Trump’s presidential permit, EO 13990 intends to put the United States “in a position to exercise vigorous climate leadership” across the globe moving forward.³⁷

On June 9, 2021, the owner of the Keystone XL Pipeline Project (Project), TC Energy Corporation (TC Energy) (formerly TransCanada Keystone Pipeline, L.P.), announced that, after a comprehensive review of its options, it has terminated the Project.³⁸ Under the terms of the 2019 presidential permit, if the permit is revoked by a future presidential administration, the pipeline must be removed at the permittee’s own expense.³⁹ TC Energy provides that it “will continue to coordinate with regulators, stakeholders and Indigenous groups to meet its environmental and regulatory commitments and ensure a safe termination of and exit from the Project.”⁴⁰

2. Enbridge Pipeline Controversy in Michigan

Canadian pipeline company, Enbridge Inc. (Enbridge) owns and operates a large system of pipelines that carry petroleum products and natural gas liquids to

32. *Id.* at 43,584.

33. *Id.*

34. See Presidential Permit of Mar. 29, 2019, *Authorizing TransCanada Keystone Pipeline, L.P., To Construct, Connect, Operate, and Maintain Pipeline Facilities at the International Boundary Between the United States and Canada*, 84 Fed. Reg. 13,101 (2019) [hereinafter Presidential Permit Keystone Pipeline].

35. Exec. Order No. 13990, *supra* note 4, at 7,041.

36. *Id.*

37. *Id.*

38. NEWS RELEASE, TC ENERGY, TC ENERGY CONFIRMS TERMINATION OF KEYSTONE XL PIPELINE PROJECT (June 9, 2021), <https://www.tcenergy.com/announcements/2021-06-09-tc-energy-confirms-termination-of-keystone-xl-pipeline-project/>.

39. Presidential Permit Keystone Pipeline, *supra* note 34, at 13,102.

40. NEWS RELEASE, TC ENERGY, *supra* note 37.

refineries in various locations throughout the United States and greater North America.⁴¹ “Enbridge’s Line 5 [pipeline] is a 645-mile petroleum pipeline that is part of the larger Enbridge Lakehead System.”⁴² The Line 5 pipeline transports “oil from Superior, Wisconsin, across Michigan’s Upper Peninsula, through northern Michigan,” and into Canada.⁴³ The Line 5 pipeline “is 30 inches in diameter, except when crossing the Straits of Mackinac, where it splits into two” dual 20-inch pipelines placed approximately 1,000 feet apart.⁴⁴ Construction on the Line 5 pipeline was completed in 1953.⁴⁵ That same year, the State of Michigan granted an easement allowing the Line 5 dual pipelines to operate through the Straits of Mackinac.⁴⁶

During her 2018 campaign, Michigan Governor Gretchen Whitmer campaigned on a promise to shut down the Line 5 pipeline.⁴⁷ “On June 27, 2019, Governor Whitmer directed the [Michigan] Department [of Natural Resources (DNR)] to undertake a comprehensive review of Enbridge’s compliance with the 1953 Easement.”⁴⁸ Following an 18-month non-public assessment of Enbridge’s compliance with the 1953 easement, allowing Enbridge to operate the dual Line 5 pipelines on the bottomlands of the Straits of Mackinac, the DNR found several incurable violations of the easement.⁴⁹ Consequently, on November 13, 2020, Governor Whitmer, along with DNR Director Dan Eichinger, issued a Notice of Revocation and Termination of the 1953 Easement (Notice), which gave Enbridge permission to site its dual pipelines on the bottomlands of the Straits of Mackinac.⁵⁰ Citing the Public Trust Doctrine and the risk of a spill in the Straits of Mackinac stemming from Enbridge’s repeated easement violations as grounds for the action, the Notice asserts that Enbridge’s Line 5 is a grave and unreasonable risk to the state’s residents and natural resources.⁵¹ The Notice requires Enbridge to cease operations of the Line 5 pipeline by May 12, 2021.⁵²

On November 13, 2020, Michigan’s State Attorney General contemporaneously filed a complaint in Ingham County Circuit Court to enforce the Notice.⁵³ On November 24, 2020, Enbridge filed a countersuit in the U.S. District Court for the Western District of Michigan (Western District), challenging the actions

41. ENBRIDGE, ABOUT US, <https://www.enbridge.com/about-us> (last visited Oct. 25, 2021).

42. Oil & Water Don’t Mix, The Problem with the Line 5 Oil Pipeline, <https://www.oilandwaterdontmix.org/problem> (last visited Oct. 25, 2021).

43. *Id.*

44. *Id.*

45. *Id.*

46. Michigan v. Enbridge Energy, L.P., Case No. 20-646-CE (Mich. Cir. Ct. Ingham Cty. Nov. 13, 2020) [hereinafter Complaint in *Enbridge Energy*].

47. Gary Wilson, *Line 5 and the Michigan Governor’s Race*, GREAT LAKES NOW (Oct. 29, 2018), <https://www.greatlakesnow.org/2018/10/line-5-and-the-michigan-governors-race/>.

48. Complaint in *Enbridge Energy*, *supra* note 45, at 6.

49. *Id.* at 9-14.

50. *Id.* at 2; Notice of Revocation & Termination of Easement from Gretchen Whitmer, Governor, Mich. Office of the Governor, & Daniel Eichenger, Director, Mich. Dep’t of Nat. Resources, to Enbridge Energy, Inc., at 1 (Nov. 13, 2020) [hereinafter Notice of Revocation & Termination].

51. *Id.* at 9.

52. *Id.* at 1, 20.

53. Complaint in *Enbridge Energy*, *supra* note 45, at 1, 3, 18-19.

of the State of Michigan, arguing the federal government has sole authority to determine the safety of an interstate pipeline.⁵⁴ The State of Michigan argued that the Western District lacked subject matter jurisdiction and requested that the Court remand the case to the 30th Circuit Court in Ingham County.⁵⁵ Briefing in the proceeding is ongoing.

The Canadian government intervened in the federal court case between the State of Michigan and Enbridge, creating the potential for the shutdown of the Line 5 pipelines to become a matter of international dispute between the governments of the United States and Canada.⁵⁶ In federal court, Canada has asserted that the Line 5 pipeline is critical energy infrastructure. The Canadian government threatened to invoke a 1977 treaty between the two countries to keep the pipeline in operation.⁵⁷

On May 11, 2021, Governor Whitmer announced the state would pursue trespass and unjust enrichment claims in court if Enbridge continues pipeline operation in violation of the November shutdown order.⁵⁸ Nevertheless, Enbridge has continued operation of the Line 5 twin pipelines, asserting that Whitmer's order amounts to an attempt by the State of Michigan "to regulate interstate pipeline safety, which the company believes is the sole jurisdiction of the federal government."⁵⁹ Enbridge and the State of Michigan are currently engaged in mediation discussions.⁶⁰

C. Hydrogen and Carbon Capture Developments

Developments by the federal government, including updates to Internal Revenue Code section 45Q, have promoted the development of blue hydrogen and carbon capture utilization and storage (CCUS) projects.⁶¹

54. Defendants' Notice of Removal at 1-2, *Michigan v. Enbridge Energy, L.P.*, Case No. 1:20-cv-01142-JTN-RSK (W.D. Mich. Nov. 24, 2020), ECF No. 1; *see also* Complaint at 1-4, *Enbridge Energy, L.P. v. Whitmer*, Case No. 1:20-cv-01141 (W.D. Mich. Nov. 24, 2020) ECF No. 1; Plaintiffs' Motion to Remand at 1, 18, 21-22, *Michigan v. Enbridge Energy, L.P.*, Case No. 1:20-cv-01142-JTN-RSK (W.D. Mich. Mar. 16, 2021) [hereinafter Motion to Remand in *Enbridge Energy*].

55. Motion to Remand in *Enbridge Energy*, *supra* note 53, at 1.

56. Nia Williams & Sebastien Malo, *Canada Invokes 1977 Pipeline Treaty with U.S. Over Line 5 Dispute*, REUTERS (Oct. 4, 2021), <https://www.reuters.com/business/energy/canada-formally-invokes-1977-pipeline-treaty-with-us-over-line-5-dispute-2021-10-04/>.

57. *Id.*

58. Letter from Gretchen Whitmer, Governor, Mich. Office of the Governor, & Daniel Eichinger, Director, Mich. Dep't of Nat. Res., to Vern Yu, Exec. Vice President, Enbridge (May 11, 2021) (on file with the State of Michigan, Office of the Governor).

59. Keith Matheny, *Enbridge Continues Straits Pipeline Operation, Defying Gov. Whitmer's Deadline*, DETROIT FREE PRESS (May 12, 2021), <https://www.freep.com/story/news/local/michigan/2021/05/12/enbridge-straits-mackinac-pipeline-whitmer-deadline-line-5/5042374001/>.

60. *Id.*

61. Int'l Energy Forum, *Circular Carbon Economy: Carbon Management Technologies Initiative – Strategies to Scale Carbon Capture, Utilization and Storage: Dialogue Insight Report 17* (2021).

1. The Consolidated Appropriations Act of 2021

In late 2020, the United States Congress passed the Consolidated Appropriations Act of 2021 (the Act), which was signed into law on December 27, 2020.⁶² The Act included three provisions that specifically promote the development and expansion of CCUS projects.

First, the Act updated Internal Revenue Code section 45Q (section 45Q).⁶³ Section 45Q offers a federal income tax credit to encourage investment in carbon capture and sequestration projects that will reduce emission of GHGs.⁶⁴ Before under section 45Q, to qualify for the tax credit, the facility where the carbon capture and sequestration equipment is installed had to begin construction prior to January 1, 2024.⁶⁵ The Act extended the deadline for construction until January 1, 2026.⁶⁶

Second, the Act adopted the Energy Act of 2020 (the Energy Act), which expanded the scope of the U.S. Department of Energy's (DOE) carbon capture program.⁶⁷ The Energy Act instructs the Office of Fossil Energy to concentrate on carbon capture, utilization and storage technologies, and authorizes a carbon capture Research and Development program, which would include six demonstrations for natural gas, coal and industrial facilities.⁶⁸ The Energy Act also directed the DOE to research and develop carbon capture technologies for natural gas power plants.⁶⁹

Third, the Act adopted the Utilizing Significant Emissions with Innovative Technologies Act (the USE IT Act).⁷⁰ The USE IT Act made CCUS projects and pipelines eligible for an expedited permitting process established through the Fixing America's Surface Transportation Act.⁷¹ The USE IT Act also required the White House Council on Environmental Quality (CEQ) to create a report on the federal regulatory framework surrounding CCUS projects and CO₂ Pipelines.⁷² The CEQ was also tasked with preparing guidance on how to facilitate the deployment and development of CCUS projects for all federal agencies and to form at least two taskforces to identify permitting and other challenges that

62. Consol. Appropriations Act of 2021, Pub. L. No. 116-260, H.R. 133, 116th Cong., 134 Stat. 1,182 (2020).

63. *Id.* at 2,549, 3,051; 26 U.S.C. § 45Q (2020).

64. 26 U.S.C. § 45Q; *see also* Consol. Appropriations Act, 134 Stat. at 2,547-49.

65. Consol. Appropriations Act, 134 Stat. at 3,051; Law of Feb. 9, 2018, 26 U.S.C. § 45Q (repealed 2020).

66. 26 U.S.C. § 45Q(d)(1); *see also* Consol. Appropriations Act, 134 Stat. at 3,051.

67. Consol. Appropriations Act, 134 Stat. at 2,418.

68. *Id.* at 2,488, 2,527-32, 2,534.

69. *Id.* at 2,529-30.

70. *Id.* at 2,243.

71. Consol. Appropriations Act, 134 Stat. at 1,835-42, 2,250-55.

72. *Id.* at 2,251-55; *see also* COUNCIL ON ENVTL. QUALITY, COUNCIL ON ENVIRONMENTAL QUALITY REPORT TO CONGRESS ON CARBON CAPTURE, UTILIZATION, AND SEQUESTRATION 6-7 (2021); Press Release, White House, Council on Environmental Quality Delivers Report to Congress on Steps to Advance Responsible, Orderly, and Efficient Development of Carbon Capture, Utilization, and Sequestration (June 30, 2021), <https://www.whitehouse.gov/ceq/news-updates/2021/06/30/council-on-environmental-quality-delivers-report-to-congress-on-steps-to-advance-responsible-orderly-and-efficient-development-of-carbon-capture-utilization-and-sequestration/>.

permitting authorities, developers, and operators encounter and how to improve such processes.⁷³ The USE IT Act also directed the DOE and EPA to “carry out a program of research, development, demonstration, and commercialization relating to carbon utilization” and, specifically, tasked the program with identifying and evaluating new uses for carbon “in commercial and industrial products.”⁷⁴

2. Further Updates to Section 45Q

On January 6, 2021, further updates to section 45Q occurred when the United States Department of Treasury and the Internal Revenue Service (IRS) released final regulations under section 45Q (the Regulation).⁷⁵ The Regulation revised and clarified several different aspects of section 45Q. Among several other updates, the Regulation revised the requirement surrounding “secure geological storage” by now permitting taxpayers to satisfy the “secure geological storage” requirement by either complying with the 40 C.F.R. section 98 subpart RR (subpart RR) or the International Standards Organization standard, ISO 27916.⁷⁶ Second, the Regulation clarified rules surrounding “carbon utilization” and, specifically, around “commercial markets” and “lifecycle analysis.”⁷⁷ Third, the Regulation clarified that the tax credit may not be transferred to contractors and subcontractors that are hired or contracted to perform the sequestration or utilization.⁷⁸ Fourth, the Regulation discussed recapture events. Specifically, the Regulations reduced the recapture period to three years and clarified that recapture events are determined separately for each project.⁷⁹

On July 1, 2021, following the issuance of the final regulations under section 45Q, the IRS provided another update to section 45Q by releasing Revenue Ruling 2021-13 (the Ruling).⁸⁰ Of note, the Ruling provided guidance on the definition of “carbon capture equipment” and clarified that a taxpayer seeking the section 45Q credit is “not required to own every component of carbon capture equipment within a single process train.”⁸¹

3. Upcoming CCUS Projects

In light of these developments, existing CCUS endeavors have sought federal funding, while new CCUS ventures and CCUS projects have been announced. On September 1, 2020, LH CO2MENT Colorado, which consists of “a

73. Consol. Appropriations Act, 134 Stat. at 2,251-55.

74. *Id.* at 2,248.

75. Credit for Carbon Oxide Sequestration, 86 Fed. Reg. 4,728 (2021) (to be codified at 26 C.F.R. pt. 1).

76. 26 C.F.R. § 1.45Q-3 (2021).

77. 26 C.F.R. § 1.45Q-4 (2021).

78. 26 C.F.R. § 1.45Q-1 (2021).

79. 26 C.F.R. § 1.45Q-5 (2021).

80. Rev. Rul. 2021-13, 2021-30 I.R.B. 152 (2021).

81. *Id.* At issue in the Ruling, was whether an acid gas removal unit (the AGR unit) met the meaning of carbon capture equipment in §1.45Q-2(c) of the Income Tax Regulations. The IRS provided that carbon capture equipment includes equipment “used for the purpose of (i) separating, purifying, drying, and/or capturing carbon oxide . . .” and since “one of the functions of the AGR unit is to separate CO2 from a gas stream,” the AGR unit met the meaning of carbon capture equipment under §1.45Q-2(c) of the Income Tax Regulations. *Id.*

partnership [between] Svante Inc., LafargeHolcim, Kiewit Engineering Group Inc., and Oxy Low Carbon Ventures, LLC,” received “\$1.5 million in federal funding” from the DOE’s National Energy Technology Laboratory for research and development.⁸² In February 2021, Summit Agricultural Group announced its creation of Summit Carbon Solutions, which aims to “develop the world’s largest carbon capture and storage project,”⁸³ and ExxonMobil announced the creation of ExxonMobil Low Carbon Solutions, which will primarily focus on investing in carbon capture and storage projects.⁸⁴ In June 2021, Mitsubishi Power Americas Inc. and “Bakken Energy LLC announced a project to establish a North Dakota blue hydrogen hub.”⁸⁵ Mitsubishi Power Americas Inc. has also partnered with Texas Brine Company “to develop large-scale long-duration hydrogen storage” in “salt caverns in New York, Virginia, Texas and Louisiana.”⁸⁶ On June 9, 2021, Navigator CO₂ Ventures LLC commenced its binding open season for its carbon capture pipeline system.⁸⁷ On June 29, 2021, Equinor and U.S. Steel Corp. announced that the two companies had entered into a memorandum of understanding to look into “the potential for developing clean hydrogen production in Ohio, Pennsylvania and West Virginia.”⁸⁸

82. TOTAL ENERGIES, U.S. DEPARTMENT OF ENERGY’S NATIONAL ENERGY TECHNOLOGY LABORATORY ANNOUNCES INVESTMENT TO FURTHER DEVELOP LH CO₂MENT COLORADO PROJECT, CARBON CAPTURE TECHNOLOGY (Sept. 17, 2020), <https://totalenergies.com/media/news/news/us-department-energys-national-energy-technology-laboratory-announces-investment>.

83. Successful Farming Staff, *Summit Carbon Solutions Aims For Zero-Carbon Renewable Fuel*, SUCCESSFUL FARMING (Feb. 18, 2021), <https://www.agriculture.com/news/business/summit-carbon-solutions-aims-for-zero-carbon-renewable-fuel>.

84. NEWS RELEASE, EXXONMOBIL, EXXONMOBIL LOW CARBON SOLUTIONS TO COMMERCIALIZE EMISSION-REDUCTION TECHNOLOGY (Feb. 1, 2021), https://corporate.exxonmobil.com/News/Newsroom/News-releases/2021/0201_ExxonMobil-Low-Carbon-Solutions-to-commercialize-emission-reduction-technology.

85. Tom DiChristopher, *Mitsubishi, Bakken Energy Aim to Develop Blue Hydrogen Hub in North Dakota*, S&P GLOBAL (June 3, 2021), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/mitsubishi-bakken-energy-aim-to-develop-blue-hydrogen-hub-in-north-dakota-64829304>.

86. Christa Reichhardt & Brian Rapp, *Mitsubishi Power and Texas Brine Join Forces on Large-scale Hydrogen Storage Solutions to Support Decarbonization Efforts in the Eastern United States*, BUSINESS WIRE (May 12, 2021), <https://www.businesswire.com/news/home/20210512005766/en/Mitsubishi-Power-and-Texas-Brine-Join-Forces-on-Large-scale-Hydrogen-Storage-Solutions-to-Support-Decarbonization-Efforts-in-the-Eastern-United-States>.

87. Navigator CO₂ Ventures LLC, *Navigator Announces Binding Open Season for Carbon Capture Project*, CISION PR NEWSWIRE (June 9, 2021), <https://www.prnewswire.com/news-releases/navigator-announces-binding-open-season-for-carbon-capture-project-301309008.html>.

88. Nerijus Adomaitis, *U.S. Steel, Norway’s Equinor Eye Clean Hydrogen Production*, REUTERS (June 29, 2021), <https://www.reuters.com/business/energy/us-steel-norways-equinor-eye-clean-hydrogen-production-2021-06-29>.

II. MEXICO AND LATIN AMERICA TRADE DEVELOPMENTS

A. Mexican Rollback of Electric Power Industry Reforms⁸⁹

“Throughout 2020 and 2021, the Mexican government has promulgated a number of legal reforms.”⁹⁰ “Said measures seek to reverse the legal framework derived from [Mexico’s] 2013 constitutional energy reform, which opened the sector to private investments.”⁹¹ These measures are being referred to as the Energy Counter-Reform.⁹² The impact of this reform is favorable to “the Federal Electricity Commission (*Comisión Federal de Electricidad* or CFE) and *Petróleos Mexicanos* (Pemex), both companies owned by the Mexican state.”⁹³ The Energy Counter-Reform has restored “the monopoly power [the] CFE and Pemex exerted before the 2013 reform” and provides the CFE and Pemex with competitive advantages in the hydrocarbon and electricity markets.⁹⁴

“Among the measures of the Energy Counter-Reform, . . . [are] (i) the reform [of] the Electric Industry Law (*Ley de la Industria Eléctrica* or LIE), which seeks to favor the CFE, and (ii) the recent reforms to the Hydrocarbons Law (*Ley de Hidrocarburos* or LH), which seek to favor Pemex.”⁹⁵

The reforms to the LIE and the LH have been challenged in Mexican Federal Courts, alleging constitutional violations against free market and competition principles.⁹⁶ Although these constitutional challenges have had some success so far, it is likely that the legality of these reforms will eventually be decided by the Mexican Supreme Court in the coming months or years.⁹⁷

1. The LIE Reform

“The LIE reform, published in the Federal Official Gazette (*Diario Oficial de la Federación* or [DOF]) on March 9, 2021,” seeks to increase the CFE’s “participation in the power generation and supply market, thereby, displacing private generators and suppliers.”⁹⁸

“Among other things, this reform sets forth new rules for the access of generators to the grid, prioritizing the energy generated by the CFE [(which is mostly based on fossil fuels)], regardless of generation costs (which, in the case of private renewable energy generation plants, are lower).”⁹⁹

89. For more information, see Marcelo Páramo Fernández, Kate Brown de Vejar & Carlos Guerrero, *Reforms in the Energy Legal Framework in Mexico and Challenge Mechanisms*, DLA PIPER (June 4, 2021), <https://www.dlapiper.com/en/mexico/insights/publications/2021/06/reforms-in-the-energy-legal-framework-in-mexico-and-challenge-mechanisms/>.

90. *Id.*

91. *Id.*

92. *Id.*

93. Fernández, Brown de Vejar & Guerrero, *supra* note 88.

94. *Id.*

95. *Id.*

96. *Id.*

97. Fernández, Brown de Vejar & Guerrero, *supra* note 88.

98. *Id.*

99. *Id.*

“The reform subjects market participants to planning criteria issued by the Mexican Ministry of Energy (*Secretaría de Energía*).”¹⁰⁰ For instance, the Ministry of Energy has considered that solar and wind generation may damage the operation of the National Electric System because the electricity generated from these sources is intermittent and unreliable, and thus, the authorities have not allowed new wind and solar projects to commence operations.¹⁰¹

Before the LIE reform, only clean energy power plants that came into operation after August 2014 could issue clean energy certificates (CELs).¹⁰² This measure was intended to promote new clean energy investments. The proposed Energy Counter-Reform amends Article 26 of the LIE to allow any clean energy facility to issue CELs.¹⁰³ With this amendment, it is foreseeable that the CFE will flood the market with CELs, thereby, discouraging new private renewable investments.

In addition, the LIE reform “eliminates the obligation of the CFE to buy cheaper energy for supply through auctions,” giving the CFE the freedom to use power generated by old CFE power plants, which can result in higher energy prices and carbon emissions.¹⁰⁴

Finally, it is worth mentioning that the Mexican authorities have increased by 400% the cost of wheeling of renewable electricity generated under the self-supply scheme, a scheme widely used by private companies.¹⁰⁵

2. The LH Reform

The LH reform, published in the DOF on May 4, 2021, seeks “to modify the principles of free competition in the fossil fuel” midstream and downstream markets, “to grant Pemex the monopoly control that it exerted . . . before the 2013 energy reform.”¹⁰⁶

Basically, the LH reform is intended to give discretionary measures to the Mexican energy authorities to stop the development or participation by the private sector in the hydrocarbons fuels market. For instance, the amended LH provides: (i) a “procedure for suspending permits in case” the authorities consider that a particular project may create “*imminent danger to national securi-*

100. *Id.*

101. Kate Brown de Vejar & Marcelo Páramo Fernández, *Mexican Renewable Energy Projects Affected by New Measures*, DLA PIPER (May 19, 2020), <https://www.dlapiper.com/en/us/insights/publications/2020/05/mexican-renewable-energy-projects-affected-by-new-measures/>. On April 29, 2020, the National System Operator (CENACE) issued the “Resolution to Guarantee the Efficiency, Quality, Reliability, Continuity and Security of the National Electric System,” which considered that the intermittence in wind and solar generation by private parties affected the System and prevented their access to the System. The affected companies are seeking federal court relief against this Resolution, which final decision is still pending. *Id.*

102. Carlos Campuzano, Alejandro Aguirre & Raquel Bierzwinsky, *Mexican CEL Ruling Roils Market*, PROJECT FINANCE: NEWS WIRE, Dec. 2019, at 1-2.

103. *Id.*; Fernández, Brown de Vejar & Guerrero, *supra* note 88.

104. Fernández, Brown de Vejar & Guerrero, *supra* note 88.

105. Kate Brown de Vejar et al., *New Measures Threaten Investments in the Mexican Energy Sector*, DLA PIPER (July 14, 2020), <https://www.dlapiper.com/en/us/insights/publications/2020/07/new-measures-threaten-investments-in-the-mexican-energy-sector/>.

106. Fernández, Brown de Vejar & Guerrero, *supra* note 88.

ty;” (ii) an obligation for all market participants to comply with minimum fuel storage requirements, which gives Pemex a significant market advantage, as Pemex controls the vast majority of the storage facilities in the country; and (iii) specific authority to “the Mexican Energy Regulatory Commission (*Comisión Reguladora de Energía* or CRE) to carry out” strict compliance investigations toward the suspension and revocation of permits.¹⁰⁷

“In this context, on May 14, 2021, the CRE published two resolutions in the DOF that resulted in” the cancelation of 139 fuel marketing permits held by private investors.¹⁰⁸ The CRE’s reasoning was that such permits were inactive and, therefore, needed to be cancelled.¹⁰⁹ Also, the CRE has recently revoked permits in connection with certain storage and distribution facilities owned by private parties, worth over \$1 billion USD.¹¹⁰ The reasoning for such revocation has not yet been made public.

In addition, before the LH reform, Pemex was subject to price controls and other specific regulation to prevent Pemex from exercising its monopoly power in the market.¹¹¹ With the LH reform, such price controls and specific regulations were abolished, which *de facto* restored Pemex to its old monopoly position.

B. LNG Industry –the *Energía Costa Azul* Project in Mexico

Energía Costa Azul (ECA) is a Mexican LNG “storage and regasification terminal” “located 23 km. north of Ensenada, Baja California, Mexico.”¹¹² It has access to deep sea waters, and is located away from residential areas.¹¹³ Given its strategic location on the west coast of Mexico, “the project is geographically positioned to connect Asia, [the] Pacific basin, and international LNG markets, as well as potential markets on the west coast of Mexico, to abundant natural gas supplies” from the western United States, “including Texas, Wyoming, Utah, and New Mexico.”¹¹⁴ ECA “represented an investment of approximately” \$1.2 billion dollars, and it supplies a billion “cubic feet of natural gas per day.”¹¹⁵ The first phase of ECA LNG was “built and operated by Sempra LNG and IEno-

107. *Id.*

108. *Id.*

109. *Id.*

110. Fernández, Brown de Vejar & Guerrero, *supra* note 88.

111. *Id.*

“The CRE published in the DOF Resolution No. A/015/2021, whereby it revoked the almost 50 administrative resolutions related to the imposition of asymmetric regulatory principles on Pemex and its subsidiary entities. These instruments, established, among other things, price regulations, contract models, and other conditions to which Pemex transactions were subject.”

Fernández, Brown de Vejar & Guerrero, *supra* note 88.

112. ECA LNG: ENERGÍA COSTA AZUL, QUIÉNES SOMOS: ENERGÍA COSTA AZUL (ECA), <https://www.energiacostaazul.com.mx/> (last visited Oct. 26, 2021) [hereinafter ECA QUIÉNES SOMOS]; ECA LNG: ENERGÍA COSTA AZUL, UBICACIÓN: UBICACIÓN ESTRATÉGICA, <https://www.energiacostaazul.com.mx/> (last visited Oct. 26, 2021) [hereinafter ECA UBICACIÓN ESTRATÉGICA].

113. ECA UBICACIÓN ESTRATÉGICA, *supra* note 111.

114. ECA LNG: ENERGÍA COSTA AZUL, PROYECTO DE LICUEFACCIÓN ECA (Dec. 9, 2020), <https://ecalng.com/es/>.

115. ECA QUIÉNES SOMOS, *supra* note 111.

va, Sempra Energy’s subsidiary in Mexico, as a single-train liquefaction facility with” a nominal capacity of 3.25 million tons per year (Mtpa) of LNG and an initial extraction capacity of approximately 2.5 Mtpa of LNG.¹¹⁶ In July of 2021, BP delivered the first carbon offset LNG shipment to the Energía Costa Azul terminal.¹¹⁷

III. EUROPEAN ENERGY MARKET DEVELOPMENTS

A. EU Carbon Border Tax Adjustment

On December 11, 2019, the European Green Deal (the Green Deal) was launched by the European Commission (EC).¹¹⁸ It was identified as one of the six EC priorities for the time-period of 2019-2024.¹¹⁹ The Green Deal is a package of approximately 50 proposed policies designed to make Europe climate-neutral by 2050.¹²⁰ Following approval by the European Parliament on March 10, 2021¹²¹, the EC, on July 14, 2021, sought to further implement the Green Deal by adopting a set of policies intended to reduce “greenhouse gas emissions by at least 55% by 2030” (the Fit for 55 Package).¹²² Among the constituent policies of the Fit for 55 Package, the EC introduced the Carbon Border Adjustment Mechanism (the CBAM), which is a tax levied on imported goods produced in non-European countries with lower environmental standards to compensate for any carbon leakage.¹²³

116. ECA LNG: ENERGÍA COSTA AZUL, SOBRE EL PROYECTO: PROYECTO DE LICUEFACCIÓN ECA, <https://ecalng.com/es/about-theproject/> (last visited Oct. 26, 2021).

117. PRESS RELEASE, BP, BP TO DELIVER ITS FIRST CARBON OFFSET LNG CARGO TO SEMPRA’S ENERGÍA COSTA AZUL RECEIVING TERMINAL IN MEXICO (July 16, 2021), <https://www.bp.com/en/global/corporate/news-and-insights/press-releases/bp-to-deliver-its-first-carbon-offset-lng-cargo-to-sempras-energia-costa-azul-receiving-terminal-in-mexico.html>.

118. Press Release, Eur. Comm’n, No. IP/19/6691, The European Green Deal Sets Out How to Make Europe the First Climate-Neutral Continent by 2050, Boosting the Economy, Improving People’s Health and Quality of Life, Caring for Nature, and Leaving No One Behind 1 (Dec. 11, 2019) (on file with the European Commission).

119. EUR. COMM’N, THE EUROPEAN COMMISSION’S PRIORITIES: 6 COMMISSION PRIORITIES FOR 2019-24, https://ec.europa.eu/info/strategy/priorities-2019-2024_en (last visited Oct. 26, 2021). The European Commission had set out, via implementation of “A European Green Deal,” Europe aims “to be the first climate-neutral continent” by becoming “a modern, resource-efficient [] economy.” EUR. COMM’N, A EUROPEAN GREEN DEAL, https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en (last visited Oct. 26, 2021).

120. Paola Tamma, Eline Schaart & Anca Gurzu, *Europe’s Green Deal Plan Unveiled*, POLITICO (Dec. 11, 2019), <https://www.politico.eu/article/the-commissions-green-deal-plan-unveiled/>.

121. *Resolution Towards a WTO-Compatible EU Carbon Border Adjustment Mechanism*, at 10-12, EUR. PARL. DOC. P9 TA(0071) (2021), https://www.europarl.europa.eu/doceo/document/A-9-2021-0019_EN.html; *Report on Resolution Towards a WTO-Compatible EU Carbon Border Adjustment Mechanism*, at 12-14, EUR. PARL. DOC. A9-0019 (2021), https://www.europarl.europa.eu/doceo/document/A-9-2021-0019_EN.pdf.

122. Press Release, Eur. Comm’n, No. IP/21/3541, European Green Deal: Commission Proposes Transformation of EU Economy and Society to Meet Climate Ambitions 1 (July 14, 2021) (on file with the European Commission).

123. Elena Sánchez Nicolás, *EU Carbon Border Tax to Target Imports From 2026*, EU OBSERVER (July 16, 2021), <https://euobserver.com/climate/152460>.

The EC summarized the purpose and need for the new legislation as follows:

the [CBAM] is a climate measure that should prevent the risk of carbon leakage and support the [European Union's (EU)] increased ambition on climate mitigation, while ensuring [World Trade Organization (WTO)] compatibility . . . As [EU raises its] . . . climate ambition and less stringent environmental and climate policies prevail in non-EU countries, there is a strong risk of so-called 'carbon leakage' – i.e.,] companies based in the EU could move carbon-intensive production abroad to take advantage of lax standards, or EU products could be replaced by more carbon-intensive imports. Such carbon leakage can shift emissions outside of Europe and therefore seriously undermine EU and global climate efforts. The CBAM will [equalize] the price of carbon between domestic products and imports and ensure that the EU's climate objectives are not undermined by production relocating to countries with less ambitious policies;¹²⁴

and, “[s]trong international cooperation will strengthen the joint climate action . . . [The CBAM] will serve as an essential element of the EU toolbox to meet the objective of a climate-neutral EU by 2050 in line with the Paris Agreement by addressing risks of carbon leakage.”¹²⁵

A CBAM is already in force in certain parts of the world, such as in California.¹²⁶ There is further global momentum for a CBAM in Asia and North America.¹²⁷

The CBAM will be phased in (subject to review in 2026) and initially applies to only five sectors considered at high-risk of carbon leakage: (i) iron and steel; (ii) cement; (iii) fertilizer; (iv) aluminum; and (v) electricity generation.¹²⁸ The EC explained the operation of the CBAM as follows:

EU importers will buy carbon certificates corresponding to the carbon price that would have been paid, had the goods been produced under the EU's carbon pricing rules. Conversely, once a non-EU producer can show that they have already paid a price for the carbon used in the production of the imported goods in a third country, the corresponding cost can be fully deducted for the EU importer. The CBAM will also help reduce the risk of carbon leakage by encouraging producers in non-EU countries to green their production processes.¹²⁹

124. EUR. COMM'N, CARBON BORDER ADJUSTMENT MECHANISM: QUESTIONS AND ANSWERS (July 14, 2021), https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661 [hereinafter EC CBAM Q&A].

125. *Commission Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism*, at 0, COM (2021) 564 final (July 14, 2021) [hereinafter *EC Proposal Regulation*].

126. LEGAL PATHWAYS TO DEEP DECARBONIZATION, CALIFORNIA ETS BORDER CARBON ADJUSTMENT, <https://lpdd.org/resources/california-ets-border-carbon-adjustment/> (last visited Oct. 26, 2021).

“California's emissions trading system requires carbon border adjustments for imports of electricity from jurisdictions without a carbon trading framework. First deliverers of imported electricity are liable for the emissions associated with electricity generated in sources outside California, provided that state does not have an ETS linked to California's one.”

Id.; see also CAL. CODE REGS. tit. 17, §§ 95801-96022 (2021).

127. EC CBAM Q&A, *supra* note 123.

128. *EC Proposal Regulation*, *supra* note 124, at 19-20.

129. Eur. Comm'n, Tax'n and Customs Union, Carbon Border Adjustment Mechanism, https://ec.europa.eu/taxation_customs/green-taxation-0/carbon-border-adjustment-mechanism_en (last visited Oct. 26, 2021).

Revenues from the CBAM will be used in the budget of the EU, as set out in the Interinstitutional Agreement on Budget and Own Resources in December 2020.¹³⁰

The EC noted that carbon leakage was also addressed by the European Emissions Trading System (the ETS), which provides a maximum amount of greenhouse gas that can be emitted by companies operating in certain sectors, such as industrials.¹³¹ However, the European Parliament also identified certain limitations of the current ETS model in effectively mitigating carbon leakage:

Under the current [ETS] . . . which provides financial incentives to cut emissions, power plants and industries need to hold a permit for each [ton] of CO₂ they produce. The price of those permits is driven by demand and supply. Due to the last economic crisis [in 2008], demand for permits has dropped and so has their price, which is so low that it discourages companies from investing in green technologies.¹³²

Given this pricing issue, proposals to reform the ETS were approved in February 2017, aiming to redesign the ETS for the years 2020-2021.¹³³ To lift permit prices, the number of allowances to be auctioned annually would be reduced, and to reduce oversupply, the European Parliament would utilize the Market Stability Reserve's (MSR) capacity to take up excess allowances on the ETS market into a reserve, from which they can be released in case of a shortage.¹³⁴ When triggered, MSR would absorb up to 24% of excess credits in each auctioning year.¹³⁵

Notwithstanding the reforms of the ETS, the EC aims to replace the ETS with the CBAM, the latter being a more sustainable long-term solution for carbon leakage.¹³⁶ The ETS allowances will be phased out gradually, with free allowances for the CBAM sectors phased out between 2026 and 2035.¹³⁷

Though both regimes have an overarching aim to deter and compensate for carbon leakage, they have a few structural differences to note. Firstly, there is no cap on emissions in a CBAM model, as it is a tax-based system.¹³⁸ The tax is levied on all emissions within the applicable sectors, and there is no restriction on the amount of emissions produced.¹³⁹

130. EC CBAM Q&A, *supra* note 123.

131. EUR. COMM'N, CLIMATE ACTION: FAQ, https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/free-allocation/carbon-leakage_en (last visited Oct. 26, 2021).

132. Society Section, *Carbon Leakage: Prevent Firms from Avoiding Emissions Rules*, NEWS: EUR. PARL. (Mar. 8, 2021), <https://www.europarl.europa.eu/news/en/headlines/society/20210303STO99110/carbon-leakage-prevent-firms-from-avoiding-emissions-rules>.

133. Secretariat of the Council, *Reform of the EU Emissions Trading Scheme*, Eur. Council, <https://www.consilium.europa.eu/en/policies/climate-change/reform-eu-ets/> (last visited Oct. 26, 2021).

134. EUR. COMM'N, CLIMATE ACTION: MARKET STABILITY RESERVE, https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/market-stability-reserve_en (last visited Oct. 26, 2021).

135. *Id.*

136. Nicolás, *supra* note 122.

137. *Id.*

138. David Pannell, *Explainer: The Difference Between a Carbon Tax and an ETS*, THE CONVERSATION (June 30, 2011), <https://theconversation.com/explainer-the-difference-between-a-carbon-tax-and-an-ets-1679>.

139. *Id.*

The mechanics of the CBAM have been explained by the EC:¹⁴⁰

the CBAM will be based on a system of certificates to cover the embedded emissions in products being subsequently imported into the EU. The CBAM departs from the ETS in some limited areas, however,[] since it is not a ‘cap and trade’ system. Instead, the CBAM certificates mirrors the ETS price . . . [and until ETS allowances] are completely phased out in 2035, the CBAM will apply only to the proportion of emissions that does not benefit from free allowances under the EU ETS, thus ensuring that importers are treated in an even-handed way compared to EU producers . . . The CBAM will mirror the ETS in the sense that the system is based on the purchase of certificates by importers. The price of the certificates will be calculated depending on the weekly average auction price of EU ETS allowances expressed in € / [ton] of CO₂ emitted. Importers of the goods will have to, either individually or through a representative, register with national authorities where they can also buy [the] CBAM certificates.¹⁴¹

By May 31st each year, producers will be required to submit to the CBAM regulatory authorities a declaration of the emissions embedded into the goods (direct and indirect during their production), subject to the CBAM imported into the EU in the previous calendar year.¹⁴² The declarations should include the total quantity of covered goods imported, expressed in megawatt-hours for electricity and in metric tons for other goods, multiplied by the embedded emissions.¹⁴³

The CBAM will be implemented gradually, with a “transitional period” between 2023 and 2025.¹⁴⁴ The proposal for the implementation of the CBAM laid out the details of the transitional period, during which:

A CBAM without financial adjustment should apply, with the objective to facilitate a smooth roll out of the mechanism hence reducing the risk of disruptive impacts on trade. Declarants should have to report on a quarterly basis the actual embedded emissions in goods imported during the transitional period, detailing direct and indirect emissions as well as any carbon price paid abroad.¹⁴⁵

In line with the objectives of the CBAM, all non-European producers will be subject to the CBAM.¹⁴⁶ However, some non-European producers that are currently a participant of the ETS or are based in countries with an emission trading system linked to the EU’s will be excluded from the CBAM, such as producers based in the European Economic Area and Switzerland.¹⁴⁷

The main implication of the CBAM is the additional carbon reduction burden transferred through supply chains in particular, as the EU is a significant trading partner in carbon-intensive goods for many countries, such as the UK and Russia.¹⁴⁸ The CBAM will entail potential additional costs borne by producers

140. EC CBAM Q&A, *supra* note 123.

141. *Id.*

142. EC Proposal Regulation, *supra* note 124, at 12.

143. *Id.* at 29.

144. *Id.* at 22.

145. *Id.*

146. EC CBAM Q&A, *supra* note 123.

147. *Id.*

148. EC Proposal Regulation, *supra* note 124, at app. 66 (SWD (2021) 643 final, pt. 1); *id.* at app. 11 (SWD (2021) 643 final, pt. 2).

exporting their goods into the EU.¹⁴⁹ For example, Russia has calculated that Russian companies may lose up to \$7.6 billion USD once the CBAM is implemented.¹⁵⁰ There are also concerns over practical aspects of its implementation. Jonathan Pershing, a member of the United States Climate Envoy's team noted in May 2021:

“I do note that it's extremely complicated to think about the structure of a border tax . . . I don't disagree in principle that it has value, but I think that it's got enormous complexity.”¹⁵¹

Indeed, there are concerns over the CBAM's one-size-fits-all approach that may contravene WTO trading principles. As the Paris Climate Agreement called for “common but differentiated responsibilities,”¹⁵² some critics claim that the CBAM does not seem to be a policy designed and implemented in a fair manner, taking into account the carbon pricing systems in other non-European countries.¹⁵³ Some WTO members stipulated that the CBAM seemed more of a new budgetary source (with almost EUR 10 billion expected to be generated annually under the CBAM),¹⁵⁴ rather than a measure aiming at climate protection,¹⁵⁵ in the meeting of the Committee on Market Access on the 12th and 16th of November 2020. The CBAM, when tabled and presented, included action points to ensure that the mechanism is compliant with WTO trading principles:

the CBAM would ensure that the price of imports reflects more accurately their carbon content. This measure has been designed to comply with [WTO] rules and other international obligations of the Union . . . To this end active outreach to third countries would be important with regard to the understanding of and compliance with [the] CBAM requirements. Moreover, the EU will engage with third countries whose trade to the EU is affected by this Regulation to explore possibilities for dialogue and cooperation with regard to the implementation of specific elements of the

149. *Id.* at 16; JOSH BURKE, MISATO SATO, CHARLOTTE TAYLOR & FANGMIN LI, WHAT DOES AN EU CARBON BORDER ADJUSTMENT MECHANISM MEAN FOR THE UK? 1 (Georgina Kyriacou et al eds., 2021).

150. Leslie Hook, Max Seddon & Nastassia Astrasheuskaya, *EU Plan for World's First Carbon Border Tax Provokes Trading Partners*, FINANCIAL TIMES (July 16, 2021), <https://www.ft.com/content/de7d12e2-0d04-43d4-b38c-cf795854a4a2>.

151. Kira Taylor, *US Raises Concerns over Europe's Planned Carbon 'Border Tax'*, EURACTIV (May 11, 2021), <https://www.euractiv.com/section/energy-environment/news/us-raises-concerns-over-europes-planned-carbon-border-tax/>. “One issue is how carbon pricing policies outside Europe can be compared with the EU's to work out whether the levy should apply or not.” *Id.* In theory, “if imported products have the same carbon footprint and a reduced carbon footprint,” there will be no need for adjustment. *Id.* (internal quotation omitted). This is “complicated when it comes to how Europe calculates the carbon content of imported products. Manufactured goods may indeed face different carbon prices – whether ‘explicit’ like an emissions trading scheme, or ‘implicit,’ like regulations and taxes.” *Id.*

152. PARIS AGREEMENT TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, at 1, U.N. Doc. FCCC/CP/2015/L.9/Rev/1 (Dec. 12, 2015); *see also id.* at art. 2.2, 4.1-4.2, 4.4-4.5, 9.1, 13; *see generally* other provisions of the Paris Agreement for more information.

153. Taylor, *supra* note 150.

154. Mehreen Khan, *EU Carbon Border Tax Will Raise Nearly €10bn Annually*, FINANCIAL TIMES (July 6, 2021), <https://www.ft.com/content/7a812f4d-a093-4f1a-9a2f-877c41811486>. “The CBAM revenues have been earmarked to help cover the cost of the EU's €750bn recovery fund, [which was] money Brussels has borrowed to support its members states” during the pandemic. *Id.*

155. Press Release, World Trade Org., Brexit, EU's Carbon Border Adjustment Mechanism Take Centre Stage at Market Access Committee (Nov. 16, 2020), https://www.wto.org/english/news_e/news20_e/mark_16ov20_e.htm.

Mechanism. It should also explore possibilities for concluding agreements to take into account their carbon pricing mechanism.¹⁵⁶

Finally, while there is controversy associated with the implementation of the CBAM, it is an essential component to progress the Green Deal and the EC's ambition to have Europe become the first climate-neutral continent. Satisfactory implementation of the CBAM, and other environmental initiatives, will require long-term international cooperation.

B. EU Hydrogen Strategy

The EU considers hydrogen a critical component of the energy transition, and its commitment to reach carbon neutrality by 2050.¹⁵⁷ On July 8, 2020, the EC published its hydrogen strategy report, setting out the foundations for developing the EU's hydrogen market (the Report).¹⁵⁸

The EC summarized the purpose of the hydrogen strategy as follows:

Hydrogen can be used as a feedstock, a fuel or an energy carrier and storage, and has many possible applications across industry, transport, power and buildings sectors. Most importantly, it does not emit CO₂ and almost no air pollution when used. It thus offers a solution to decarbonize industrial processes and economic sectors where reducing carbon emissions is both urgent and hard to achieve. All this makes hydrogen essential to support the EU's commitment to reach carbon neutrality by 2050 and for the global effort to implement the Paris Agreement while working towards zero pollution.¹⁵⁹

At present, the industrial sector accounts for the majority of the EU's hydrogen consumption—in particular, as a feedstock for petrochemicals and fertilizer.¹⁶⁰ As stated in the Report, most of this demand (98%) is satisfied by using hydrocarbons as a fuel and feedstock¹⁶¹ to produce hydrogen, resulting in significant carbon dioxide emissions (70-100 million tonnes of CO₂ annually).¹⁶²

According to the Report, hydrogen use has tripled since 1980 and is expected to increase 7% annually through 2030.¹⁶³ This increase in demand will largely be driven by hydrogen's use in the energy transition, including as a fuel

156. *EC Proposal Regulation*, *supra* note 124, at 2.

157. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Hydrogen Strategy for a Climate-Neutral Europe*, at 1, COM (2020) 301 final (July 8, 2020) [hereinafter *EC Hydrogen Strategy*]; Siladitya Ray, *Climate Neutral by 2050: European Union Reaches Tentative Climate Deal Ahead of Biden Summit*, FORBES (Apr. 21, 2021), <https://www.forbes.com/sites/siladityaray/2021/04/21/climate-neutral-by-2050-european-union-reaches-tentative-climate-deal-ahead-of-biden-summit/>.

158. *EC Hydrogen Strategy*, *supra* note 156, at 6.

159. *Id.* at 1.

160. HYDROGEN EUROPE, HYDROGEN ROADMAP EUROPE REPORT: A SUSTAINABLE PATHWAY FOR THE EUROPEAN TRANSITION 48 (Fuel Cells and Hydrogen Joint Undertaking eds., 2019), https://www.fch.europa.eu/sites/default/files/Hydrogen%20Roadmap%20Europe_Report.pdf.

161. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Powering a Climate-Neutral Economy: An EU Strategy for Energy System Integration*, at 12, COM (2020) 299 final (July 8, 2020) [hereinafter *EC Powering a Climate-Neutral Economy*]; HYDROGEN EUROPE, *supra* note 159, at 8-9, 48-50; *EC Hydrogen Strategy*, *supra* note 156, at 1, 4, 21.

162. *EC Hydrogen Strategy*, *supra* note 156, at 1.

163. *Id.*; HYDROGEN EUROPE, *supra* note 159, at 9-10, 47.

for transport, as a replacement for other carbon-intensive fuels, as a heat source for buildings, and as a fuel for power generation (potentially blended into natural gas).¹⁶⁴ “In its strategic vision for a climate-neutral EU published in November 2018,”¹⁶⁵ “the share of hydrogen in Europe’s energy mix is projected to grow from the current less than 2%,”¹⁶⁶ “to 13-14% by 2050.”¹⁶⁷

To develop the hydrogen market, the EC has proposed a value-chain approach (which is expected to apply at the EU, national and regional level).¹⁶⁸ The EC has commented that:

Building up a hydrogen economy in Europe requires a full value chain approach. The production of hydrogen from renewable or low-carbon sources, the development of infrastructure to supply hydrogen to the end-consumers, and the creation of market demand need to go in parallel, activating a virtuous circle of increased supply and demand for hydrogen.¹⁶⁹

By adopting a value-chain approach, the EC states in the Report that it will ensure that aspects of the market do not develop in isolation.¹⁷⁰

Although the Report focuses on all areas of the hydrogen market, the following segments are the most significant.

1. Generation

The EC’s view is that hydrogen production must become fully decarbonized.¹⁷¹ Accordingly, the EC has prioritized the development of renewable hydrogen produced predominately from wind and solar energy.

The EC has established a headline commitment of “at least 6 GW of renewable hydrogen electrolyzers in the EU by 2024, and 40 GW . . . by 2030.”¹⁷² This represents a significant increase compared to today’s production capacity of approximately 1 GW.¹⁷³ The Report does not expressly outline how these generating capacities are expected to be achieved.

164. *EC Hydrogen Strategy*, *supra* note 156, at 2, 8, 10.

165. *Id.* at 1; *see also* *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank: A Clean Planet for All, A European Strategic Long-term Vision for a Prosperous, Modern, Competitive and Climate Neutral Economy*, COM (2018) 773 final (Nov. 28, 2018).

166. *EC Hydrogen Strategy*, *supra* note 156, at 1; HYDROGEN EUROPE, *supra* note 153, at 8-9.

167. *EC Hydrogen Strategy*, *supra* note 156, at 1. “Considering hydrogen consumption for energy purposes only, the shares in different scenarios range from less than 2% to more than 23% in 2050.” *Id.* at 1 n.5 (internal citations omitted).

168. *Id.* at 9-10, 13-14, 18; *Commission for Environment, Climate Change and Energy, 3rd commission mtg., European Committee of the Regions, 139th plen. sess., Towards a Roadmap for Clean Hydrogen – the Contribution of Local and Regional Authorities to a Climate-Neutral Europe*, at Opinion No. CDR 549/2020, Comm’n No. ENVE-VII/004, EN Doc. No. COR-2020-00549-00-00-AC-TRA (July 2, 2020).

169. *EC Hydrogen Strategy*, *supra* note 156, at 9 (emphasis removed).

170. *Id.* at 19.

171. *Id.* at 1.

172. *Id.* at 3.

173. *EC Hydrogen Strategy*, *supra* note 156, at 3,12 (emphasis removed).

2. Supply/ Infrastructure

Although the EC anticipates that the requirement for hydrogen infrastructure will initially remain limited, as demand will be met by production close to or on-site, the Report recognizes that the long-term, widespread use of hydrogen as an energy carrier in the EU will require energy infrastructure for connecting supply and demand.¹⁷⁴

The Report, therefore, also focuses on transportation, anticipating that transport will be multimodal, including transport by:

- pipeline (repurposing existing gas infrastructure¹⁷⁵ and new dedicated hydrogen pipelines);
- road and rail (ideally using hydrogen fuel cell electric vehicles); and
- marine and other vessels.¹⁷⁶

The Report also recognizes that the form of hydrogen (which is likely to be project specific) will need to be considered when determining the most appropriate mode of transport.¹⁷⁷ For example, hydrogen can be transported in gaseous or liquid states, or bound in larger “molecules that are easier to transport,” such as ammonia.¹⁷⁸ “Hydrogen can also provide cyclical or seasonal storage, e.g. in salt caverns,”¹⁷⁹ “to produce electricity to cover peak demand, secure hydrogen supply, and allow electrolyzers to operate flexibly.”¹⁸⁰

Although no definitive solutions are proposed, the EC notes that sound infrastructure planning is crucial to ensure full integration of hydrogen, and a Ten-Year Network Development Plan is recommended.¹⁸¹

3. Specific Mechanisms

To supplement the overall policy objectives, the Report outlines the following headline actions that the EC has taken and/or will take to develop the hydrogen market. The majority of the items listed are at a preliminary stage and, as such, specific details are not publicly available. A full list of initiatives is included in the Report.¹⁸²

174. *Id.* at 9, 14.

175. *EC Hydrogen Strategy, supra* note 156, at 1-2m 15. “[I]t is expected that a hydrogen network in Germany and the Netherlands may consist of up to 90% of [] repurposed natural gas infrastructure. Repurposed pipelines are often already to a large extent depreciated.” *Id.* at 15 n.57.

176. *Id.* at 6, 17.

177. *Id.* at 5-6.

178. *Id.* at 14.

179. *EC Hydrogen Strategy, supra* note 156, at 14. “In the UK, at Teesside in Yorkshire, a British company stores 1 million m³ of pure hydrogen (95% H₂ and 3–4% CO₂) in three salt caverns at a depth about 400 m at 50 bar. Europe’s technical potential to store hydrogen in salt caverns is around 85 PWh.” *Id.* at 14 n.54 (internal citations omitted).

180. *Id.* at 14.

181. *Id.* at 15.

182. *Id.* at 21-23.

a. Investment Agenda

European Clean Hydrogen Alliance brings together industry, national and local public authorities, civil society and other stakeholders to develop an investment agenda and build a concrete pipeline of projects.¹⁸³ The EC “launched an invitation to all 1000+ members of the European Clean Hydrogen Alliance to submit projects for renewable and low-carbon hydrogen technologies and solutions” in April 2021.¹⁸⁴

b. Boosting Demand and Scaling Production

The EC proposes measures to facilitate the use of hydrogen in the transport sector in the EC’s 2020 Sustainable and Smart Mobility Strategy.¹⁸⁵ This includes (amongst others): (i) development of hydrogen fuel-cell commercial fleets;¹⁸⁶ (ii) hydrogen rail (where electrification is not practicable); and (iii) building 1,000 hydrogen refueling stations by 2025.¹⁸⁷

c. Market Rules and Infrastructure

Planning of hydrogen infrastructure has commenced, including in the Trans-European Networks for Energy and Transport and the Ten-Year Network Development Plans (TYNDP).¹⁸⁸ In particular, a 2022 TYNDP is being developed with a focus on hydrogen “to support the EU climate and energy ambitions.”¹⁸⁹

The EU Hydrogen Strategy is a reflection of the unprecedented business and political attention that hydrogen is receiving, and it signals the EC’s commitment to developing the European hydrogen market, cementing hydrogen’s position as a key part of the energy transition. Further, although specific details are limited, hydrogen produced from renewable energy is a clear focus for the EC.

183. *EC Hydrogen Strategy*, *supra* note 156, at 3, 21.

184. Press Release, Directorate-Gen. Internal Mkt. Indus., Entrepreneurship & SMEs, *Hydrogen: Commission Launches Project Collection for European Clean Hydrogen Alliance Investment Pipeline*, EUR. COMM’N, at 1 (Apr. 12, 2021), https://ec.europa.eu/growth/content/hydrogen-commission-launches-project-collection-european-clean-hydrogen-alliance-investment_en.

185. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Sustainable and Smart Mobility Strategy – Putting European Transport on Track for the Future*, COM (2020) 789 final (Dec. 9, 2020).

186. *Id.* at 4; *EC Powering a Climate-Neutral Economy*, *supra* note 160, at 12.

187. *EC Powering a Climate-Neutral Economy*, *supra* note 160, at 5.

188. *Id.* at 18; EUR. NETWORK OF TRANSMISSION SYS. OPERATORS FOR GAS, TEN-YEAR NETWORK DEVELOPMENT PLAN: EXECUTIVE SUMMARY 4 (2020), https://www.entsog.eu/sites/default/files/2021-07/TYNDP2020_Executive_Summary_0.pdf.

189. EUR. NETWORK OF TRANSMISSION SYS. OPERATORS FOR GAS, *supra* note 180, at 4, 35.