



Report to the Subcommittee
on the Western Hemisphere,
Committee on Foreign Affairs,
House of Representatives

August 2018

NORTH AMERICAN ENERGY INTEGRATION

Information about
Cooperation with
Canada and Mexico
and among
U.S. Agencies

GAO Highlights

Highlights of [GAO-18-575](#), a report to the Subcommittee on the Western Hemisphere, Committee on Foreign Affairs, House of Representatives

Why GAO Did This Study

According to a U.S. government study, increased U.S. energy trade with Canada and Mexico—two of the United States' top energy trade partners—is viewed as a major contributor to U.S. economic prosperity and energy security. In recent years, North American energy production has experienced changes. For example, the United States has become the world's top oil producer, Canada has substantially increased its oil outputs, and Mexico has implemented energy reforms. To address energy production and trade issues, the public sector and private sector stakeholders have advocated for further integration of the three North American countries' energy sectors.

GAO was asked to review the role of U.S. agencies in supporting energy integration in North America. This report examines (1) ways in which the U.S., Canadian, and Mexican governments cooperate on North American energy integration; (2) U.S. agencies' activities to facilitate North American energy integration; (3) U.S. agencies' efforts to coordinate among themselves on North American energy integration; (4) ways in which U.S. agencies receive feedback from U.S. industry and civil society regarding North American energy integration; and (5) steps that U.S., Canadian, and Mexican officials suggested to further facilitate North American energy integration. GAO reviewed bilateral and trilateral cooperation activities and mechanisms; surveyed U.S. agencies involved in energy integration; and interviewed U.S., Canadian, and Mexican energy officials.

GAO is not making any recommendations in this report.

View [GAO-18-575](#). For more information, contact Kimberly Gianopoulos at (202) 512-8612 or gianopoulos@gao.gov.

August 2018

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Information about Cooperation with Canada and Mexico and among U.S. Agencies

What GAO Found

Cooperation. The United States cooperates with Canada and Mexico on integrating North American energy markets and infrastructure (energy integration). Cooperation occurs at the presidential and ministerial levels (e.g., the countries' secretaries or ministers of energy) for strategic issues and at the agency level for technical issues. However, progress on some strategic issues has been limited. For example, development of a North American energy strategy, which the U.S. Department of Energy (DOE) proposed in March 2017, was suspended later that year because of disagreement about its scope. Discussions of the strategy resumed in 2018, according to DOE officials.

Agency activities. Eight U.S. agencies have engaged in multiple efforts to facilitate North American energy integration. DOE generally serves as the lead agency on energy integration issues, while the Department of State—the lead agency on foreign policy—also leads some bilateral and trilateral efforts. Other agencies play roles in areas such as regulatory compliance or efforts to open energy markets. Agency officials GAO surveyed and interviewed identified 81 energy integration–related activities conducted in 2014 through 2017, including international agreements and other instruments, research and development, technical forums and assistance, regulatory cooperation, and trade promotion.

Interagency coordination. U.S. agency officials reported coordinating on energy integration through high-level U.S. interagency meetings, summits, and other means. For example, agencies participating in a National Security Council–led working group share information, provide advice, and coordinate on activities. Agency officials also reported using mechanisms such as stakeholder forums and staff discussions to coordinate on energy integration issues.

Stakeholder feedback. U.S. agencies receive feedback on energy integration issues from the private sector and civil society through formal mechanisms such as comments in the Federal Register and public–private advisory entities. For example, the U.S.–Mexico Energy Business Council is designed to capture private sector feedback. Informal feedback comes through activities such as emails, phone calls, and letters.

Steps suggested by U.S., Canadian, and Mexican officials. Officials in the three countries expressed general satisfaction with intergovernmental cooperation on energy integration and said cooperative activities had helped foster integration. They also suggested further work in areas such as aligning energy regulations.

Steps Suggested by U.S., Canadian, and Mexican Officials to Further North American Energy Integration

Align energy-related regulations. Align regulations, codes, and standards in all three countries to the extent possible.

Streamline the U.S. Presidential permitting process. Establish a more consistent process for obtaining Presidential permits for transborder energy infrastructure projects.

Facilitate cross-border movement of equipment and workers. Implement processes to facilitate movement of personnel and equipment across borders.

Involve states and provinces in energy integration efforts. Increase states' and provinces' involvement in efforts to advance North American energy integration.

Source: GAO analysis of information provided by U.S., Canadian, and Mexican officials. | GAO-18-575

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Abbreviations

Action Plan	North American Climate, Clean Energy, and Environment Partnership Action Plan
CCUS	carbon capture, utilization, and storage
Commerce	Department of Commerce
DHS	Department of Homeland Security
DOE	Department of Energy
DOT	Department of Transportation
FERC	Federal Energy Regulatory Commission
Interior	Department of the Interior
ISO	International Organization for Standardization
MOU	memorandum of understanding
NAFTA	North American Free Trade Agreement
NERC	North American Electric Reliability Corporation
NSC	National Security Council
State	Department of State
Treasury	Department of the Treasury
USAID	U.S. Agency for International Development

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August 2, 2018

The Honorable Paul Cook
Chairman
The Honorable Albio Sires
Ranking Member
Subcommittee on the Western Hemisphere
Committee on Foreign Affairs
House of Representatives

The Honorable Jeff Duncan
House of Representatives

Increased energy trade with Canada and Mexico—both of which have open, stable, diversified, and market-driven economies—is viewed as a major contributor to U.S. economic prosperity and energy security, according to a U.S. government study.¹ The energy sector across North America is extensively integrated, with billions of dollars traded in oil, natural gas and petroleum products each year that are transported through various modes of infrastructure. Moreover, the United States’ energy trade relationships with Canada and Mexico have undergone important changes. For example, in recent years, the United States has become the world’s top oil producer, Canada has increased its oil output substantially, and Mexico has implemented energy reforms. While the United States’ energy trade with Canada and Mexico has helped to promote general economic growth in all three countries, it has also prompted debate on topics such as the environmental impacts of energy resource development and the expansion of energy infrastructure. To address issues related to regional energy production and trade and support regional prosperity and energy security, stakeholders from the public and private sectors in all three North American countries have expressed support for further integration of the countries’ energy sectors.

We were asked to review the role of U.S. agencies in supporting the integration of North American energy markets and infrastructure (North

¹Congressional Research Service, *Cross-Border Energy Trade in America: Present and Potential*, R44747 (Washington, D.C.: Jan. 30, 2017).

American energy integration²). This report examines (1) ways in which the U.S., Canadian, and Mexican governments cooperate on North American energy integration; (2) U.S. agencies' activities to facilitate North American energy integration; (3) U.S. agencies' efforts to coordinate among themselves on North American energy integration; (4) ways in which U.S. agencies obtain feedback and input from U.S. industry and civil society regarding North American energy integration; and (5) steps that U.S., Canadian, and Mexican officials suggested to further facilitate North American energy integration.

To examine the ways in which the U.S., Canadian, and Mexican governments cooperate on North American energy integration, we interviewed U.S., Canadian, and Mexican officials about the processes used to cooperate on energy integration at the strategic and technical levels. We also reviewed documents and information on cooperation mechanisms provided by these officials. To examine agencies' activities to facilitate North American energy integration, we reviewed U.S. agency documents and interviewed officials regarding agencies' roles and responsibilities related to energy integration. We also developed an inventory of U.S. agencies' activities related to energy integration, based on information that agencies provided in response to a survey in which we asked about their activities during 2014 through 2017. To examine U.S. federal agencies' efforts to coordinate among themselves and obtain feedback and input from industry and civil society regarding North American energy integration, we interviewed cognizant U.S. government officials and a nongeneralizable sample of private sector and civil society representatives. We used information obtained through these discussions to describe the various mechanisms and processes that U.S. agencies use to coordinate among themselves and to communicate with industry and civil society. In addition, we interviewed participants of an ongoing interagency working group to obtain their perspectives related to key considerations in implementing interagency collaboration. To examine steps suggested by U.S., Canadian, and Mexican officials to further

²While North American energy integration is discussed among a broad range of cross-border stakeholders, there is no single definition of the term. For the purposes of this report, we define North American energy integration as including government efforts to reduce barriers to free trade; to open opportunities for, and protect, foreign investment; to develop comparable energy regulations across nations; and to coordinate and expand cross-border energy trade infrastructure (i.e., pipelines, railroads, shipping, and electricity transmission interconnectivity) efficiently. We derived this definition from information provided by government officials and private sector and civil society representatives whom we interviewed.

facilitate North American energy integration, we asked officials in each country to suggest steps to further facilitate integration; we report suggestions discussed by at least one official in all three countries. See appendix I for a more detailed description of our scope and methodology.

We conducted this performance audit from April 2017 to July 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

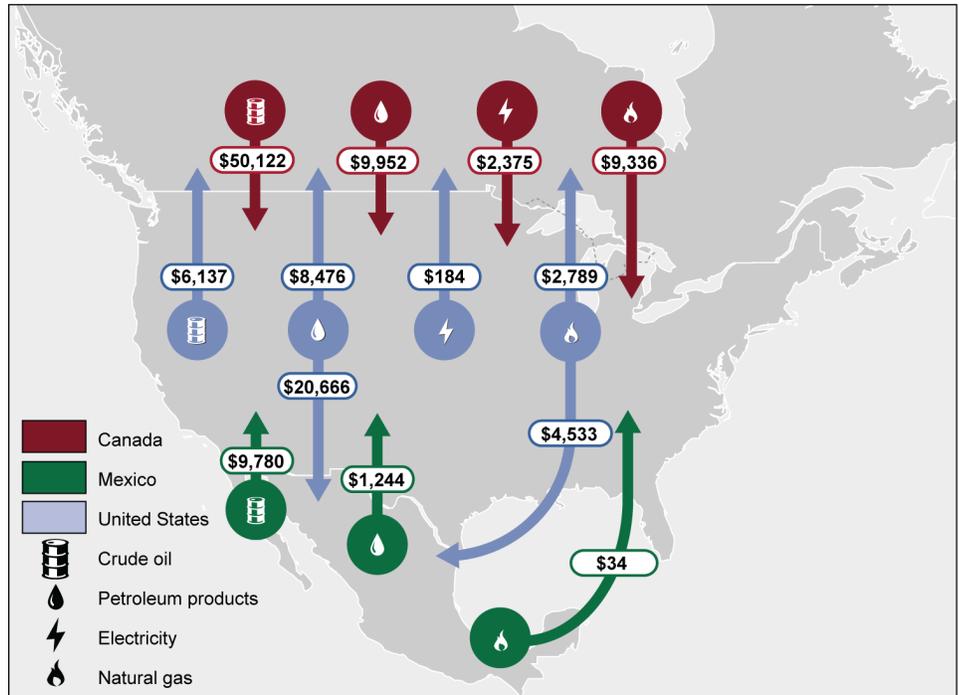
North American Energy Trade

Energy markets across the United States, Canada, and Mexico are extensively integrated. For example, Canada and Mexico—respectively, the largest and fourth largest foreign suppliers of crude oil to the United States—together supply almost half of total U.S. petroleum imports, according to DOE data. The United States is by far Canada’s most significant crude-oil customer. In addition, Canada and Mexico are major buyers of petroleum products refined in the United States. A growing trade in natural gas produced in the United States is also increasingly important to the energy relationship among the three countries, according to a government report.³ Moreover, trade in the other energy commodities, such as electricity, natural gas liquids, and coal, is comparatively small yet important to some U.S. regions. In 2017, the value of the energy trade between the United States and its North American neighbors exceeded \$125 billion, with almost \$83 billion in U.S. energy imports and almost \$43 billion in exports, according to U.S. Census data (see fig. 1).

³Congressional Research Service, *Cross-Border Trade in America: Present and Potential*.

Figure 1: Value of U.S. Trade in Crude Oil, Petroleum Products, Natural Gas, and Electricity with Canada and Mexico, 2017

U.S. dollars in millions



Source: GAO analysis of U.S. Census data. | GAO-18-575

Note: Electricity trade between Mexico and the United States is relatively small, and U.S. Census data do not include the values of these imports and exports, according to a U.S. Census official.

Cross-Border Energy Infrastructure

Extensive cross-border infrastructure is used to transport oil, refined petroleum products, and natural gas between the United States and both Canada and Mexico. Pipelines are the primary means of transporting crude oil from Canada to the United States; at present, six pipeline systems link the petroleum-producing regions in western Canada to U.S. markets. Marine vessels are the primary means used to convey Mexican crude oil imported by the United States.⁴ Marine vessels are also used to transport more than 75 percent of refined petroleum products exported by the United States to Canada and Mexico, and pipelines, rail, or trucks are used to transport the remainder. Pipelines are also used to transport all

⁴No crude-oil pipeline capacity currently exists or is proposed between the United States and Mexico.

U.S. exports of natural gas to Canada and Mexico as well as Canadian gas exports to the United States, with 24 pipelines crossing the U.S.–Canadian border and 16 pipelines crossing the U.S.–Mexican border.

Cross-border electrical infrastructure is significant between the United States and Canada but is limited between the United States and Mexico. There are 30 major U.S.–Canadian transmission connections, while synchronized U.S.–Mexican connections exist only at the border between Mexico and the state of California.

North American Energy Integration and Security

According to the U.S. Department of Energy (DOE), energy integration is in the interest of all North American countries because it expands the size of energy markets, creates economies of scale to attract private investment, lowers capital costs, and can reduce energy costs for consumers. Expanding energy systems may also allow for the development of a more diverse mix of energy resources, processing facilities, and end uses, all of which increase energy security.

The International Energy Agency defines energy security as the uninterrupted availability of energy sources at an affordable price. According to agency documents, long-term energy security primarily involves timely investments to supply energy to meet economic development and environmental needs. Short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance.

Mexico's Energy Reform

Energy reforms in Mexico's oil and gas sector, which received limited capital investment for decades, could contribute to North American energy and security as well as cross-border energy trade, according to government reports.⁵ Until 2013, Mexico's constitution prohibited foreign involvement in most activities in the oil and power sectors, according to a think-tank report.⁶ According to the report, the Mexican congress enacted

⁵Department of Energy, *Quadrennial Energy Review: Energy Transmission, Storage, and Distribution Infrastructure* (April 2015); and Clare Ribando Seelke, Michael Ratner, M. Angeles Villareal, and Curry L. Hagerty, *Mexico's Oil and Gas Sector: Background, Reform Efforts, and Implications for the United States*, R43313 (Washington, D.C.: Congressional Research Service, June 6, 2014).

⁶Lisa Viscidi and Rebecca O'Connor, *U.S.-Latin America Energy Investment: Proposals for Policy Engagement*, Energy Working Paper (Washington, D.C.: Inter-American Dialogue, May 2017).

a sweeping energy reform in 2013 that ended the state-owned oil company PEMEX's monopoly over oil exploration and production and the state-owned electric company Federal Electricity Commission's control over electricity generation. As a result, Mexico's energy sector opened to foreign investment in ways not possible since the sector was nationalized in 1938, providing new opportunities for U.S. investors, according to the think-tank report and the Congressional Research Service.⁷ According to Mexican government officials, since that time Mexico has established or revamped a number of agencies to govern and operate its energy sector and has awarded leases and contracts to expand exploration, production, and distribution of energy supplies. Since Mexico's reform was enacted, U.S. companies have participated in winning bids for each of Mexico's oil and gas tenders, with \$6.5 billion pledged in upstream investment, according to the think-tank report.⁸

North American Free Trade Agreement Renegotiation

The current administration has made the renegotiation of the North American Free Trade Agreement (NAFTA) a priority; as of April 2018, negotiations to renew NAFTA had been ongoing since August 2017. According to a January 2017 Congressional Research Service report, since NAFTA entered into force on January 1, 1994, its market-opening provisions have gradually eliminated nearly all tariff and most nontariff barriers on goods produced and traded within North America, including energy commodities.⁹ In addition, according to energy industry representatives, despite previous limited investment opportunities in Mexico, NAFTA has enhanced North American energy integration, facilitating a greater flow of oil, natural gas, and petroleum-derived products among all three North American countries.

⁷Viscidi and O'Connor, *U.S.-Latin America Energy Investment: Proposals for Policy Engagement*; and Seelke, Ratner, Villareal, and Hagerty, *Mexico's Oil and Gas Sector*. According to the Department of Energy (DOE), Mexico's reforms retain government control and ownership of assets while opening oil and gas resources to private exploration and development (see Department of Energy, *Quadrennial Energy Review*).

⁸Viscidi and O'Connor, *U.S.-Latin America Energy Investment: Proposals for Policy Engagement*.

⁹Congressional Research Service, *NAFTA Renegotiation and Modernization*, R44981 (Washington, D.C.: Oct. 12, 2017).

U.S. Agencies' Roles and Responsibilities Related to North American Energy Integration

A number of U.S. agencies oversee activities related to energy collaboration efforts with Mexico and Canada. We identified the following eight agencies as having a role in energy cooperation efforts that may support North American energy integration.¹⁰

- **Department of Energy (DOE).** DOE is responsible for advancing the energy, environmental, and nuclear security of the United States. DOE also plays a lead role in North American energy integration activities. DOE has established partnerships with its primary government partners in Canada and Mexico—the Department of Natural Resources of Canada (Natural Resources Canada) and Mexico's Secretariat of Energy—through various memorandums of understanding (MOU). While multiple DOE offices engage in energy integration activities, the Office of International Affairs has primary responsibility for international energy cooperation and leads key cooperation initiatives. The Office of International Affairs is responsible for coordinating the framework for bilateral collaboration between DOE and Natural Resources Canada. According to DOE, areas of U.S.–Canadian cooperation include responsible development of unconventional oil and gas, safe and modern infrastructure, responsible use of energy and energy efficiency, and carbon capture and storage. DOE issues presidential permits for cross-border electric transmission lines and associated facilities, authorizes electricity export and is responsible for authorizing natural gas exports from the United States.¹¹ Authorization for natural gas exports is granted without modification or delay for U.S. partner countries in free trade agreements that provide for national treatment for trade in natural gas, which, according to Congressional Research Service, presently includes Canada and Mexico.

¹⁰In addition, the North American Electric Reliability Corporation (NERC), while not a federal agency, plays a role in regulating and establishing standards for cross-border electricity grid reliability markets in North America. For this reason, we interviewed NERC officials, who identified some NERC activities related to energy integration. See app. II for more information.

¹¹U.S. presidential permits are required for the construction, connection, operation, and maintenance of certain facilities that cross the United States' borders with Canada and Mexico. Issuance of permits for electricity transmission lines and associated facilities is delegated to DOE; for pipelines that transport liquids such as petroleum and petroleum products, to State; and for natural gas pipelines and associated facilities, to the Federal Energy Regulatory Commission.

-
- **Department of the Interior (Interior).** Interior plays an important role in domestic energy production, managing energy produced on America's federally managed lands and the U.S. outer continental shelf, including oil, gas, coal, wind, solar, and hydropower. Interior also has important cooperative relationships with counterpart agencies in Canada and Mexico, according to Interior officials. As subject matter experts, various Interior offices, such as the Bureau of Ocean Energy Management, and the Bureau of Safety and Environmental Enforcement collaborate with their counterparts in Canada and Mexico to share information, experience, and best practices and provide advice and technical assistance. Interior's Office of International Affairs is responsible for providing coordination and support as needed on cross-cutting international issues that relate to more than one bureau, including energy cooperation.
 - **Department of Commerce (Commerce).** Commerce's International Trade Administration works to remove barriers to U.S. energy development and trade, notably U.S. exports of energy resources and products to Mexico and Canada. The International Trade Administration also works to open markets for energy products in Mexico and Canada, and organizes trade missions.
 - **Department of State (State).** As the lead agency for foreign policy related to energy, State may play a part in most bilateral and trilateral efforts. State's role related to North American energy integration includes that of a convening or facilitating authority. State's Bureau of Energy Resources typically leads these activities but also works closely with State's Bureau of Western Hemisphere Affairs. In addition, as subject matter experts, State energy and economic officers at embassies in Canada and Mexico report on energy policy and market developments and play a role in communicating, and helping to facilitate interactions, with other U.S. federal agencies and their foreign counterparts. Further, the Secretary of State plays a key role in energy infrastructure because of his or her responsibility in issuing or denying presidential permits for liquid petroleum pipelines that cross U.S. international borders.
 - **Department of Transportation (DOT).** DOT plays a role in regulating and enforcing safety standards for the transportation of energy products, including crude oil and gas, ethanol, and natural gas. According to DOT, its Pipeline and Hazardous Materials Safety Administration is responsible for regulating and ensuring the safe and secure movement of energy and other hazardous materials to industry and consumers by all modes of transportation, including pipelines. DOT officials work closely with their counterparts in Canada and

Mexico when developing draft regulations related to various energy transportation issues, notably those that could affect cross-border trade and safety.

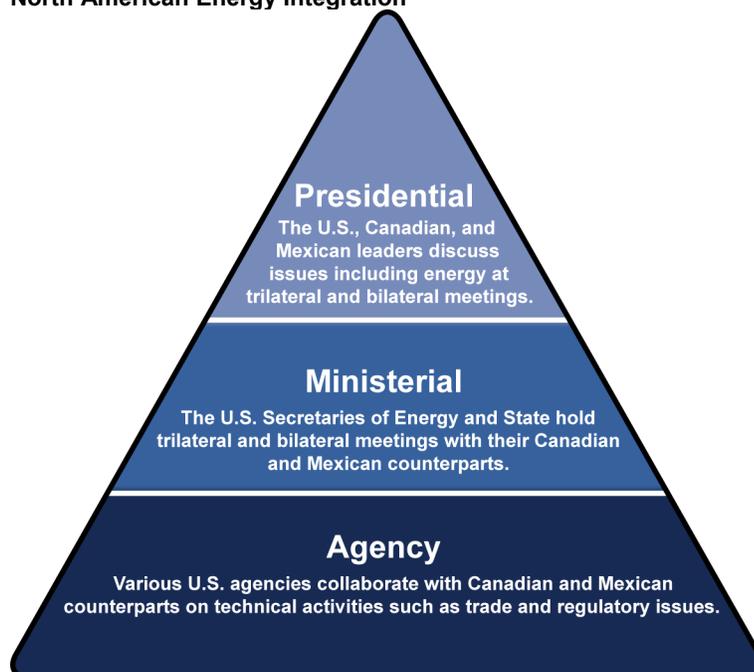
- **Federal Energy Regulatory Commission (FERC).** As an independent regulatory agency, FERC has authority to regulate the transmission of electricity, natural gas, and oil between U.S. states and plays a role in facilitating cross-border natural gas pipelines. FERC has responsibility for issuing or denying presidential permit applications for natural gas pipelines that cross the U.S. border with Mexico or Canada.
- **United States Agency for International Development (USAID).** As part of its mission and in support of U.S. foreign policy, USAID leads the U.S. government's international development through partnerships and investments. According to USAID officials, USAID has played a role in integrating the electricity markets of the United States and Mexico by supporting the synchronization of regulations, enhancing investment opportunities, and creating easier transmission interconnections between the two countries. As part of those efforts, USAID facilitated technical exchanges between Mexican officials and U.S. grid operators, universities, and other stakeholders.
- **Department of the Treasury (Treasury).** The role of Treasury's newly reorganized Office of Investment, Energy, and Infrastructure includes developing a multipart approach that seeks to promote U.S. exports of energy and energy infrastructure; attract investments in the areas of energy and infrastructure; and catalyze private capital for the financing of exports and investment projects. As part of that approach, the office is in the process of formulating and negotiating energy frameworks with foreign partners, including Mexico, according to officials.¹²

¹²As of June 2018, the energy framework with Mexico had been negotiated but remained unsigned, pending the resolution of certain NAFTA-related issues, according to a Treasury official.

U.S., Canadian, and Mexican Governments Cooperate on Energy Integration, although Some Strategic Efforts Have Made Limited Progress

Generally speaking, the United States cooperates on energy integration with Canada and Mexico strategically at the presidential and ministry levels and technically at the agency level, although progress on some strategic efforts has been limited. At the presidential level, trilateral cooperation has occurred mainly through the North American Leaders' Summit, where the leaders of the three countries discuss economic issues, including energy, according to U.S. government officials. The last summit was in 2016, and as of April 2018 a future summit had not been scheduled. At the ministry level, DOE and State have recently conducted meetings with their Canadian and Mexican counterparts. However, efforts to develop a North American Energy Strategy were placed on hold in late 2017 because of disagreement about its scope, although discussions resumed in 2018, according to DOE officials. At the agency level, U.S. officials and their counterparts in Mexico and Canada cooperate technically to address specific issues related to North American energy integration. Figure 2 illustrates the three levels of cooperation on energy integration between the U.S., Canadian, and Mexican governments.

Figure 2: Levels of Cooperation between the United States, Canada, and Mexico on North American Energy Integration



Source: GAO analysis of information from the Departments of Energy and State. | GAO-18-575

Presidential-Level Cooperation

U.S. cooperation with Canada and Mexico at the presidential level has occurred primarily through the North American Leaders' Summit, according to U.S. government officials. During the summits, the leaders of the three countries meet to discuss economic, social, and political issues—including energy—on which the three countries can cooperate. The summits have taken place every 1 or 2 years since 2005; the last summit was held in June 2016, in Ottawa. State officials said that if past patterns were followed, the next summit would be scheduled in 2018 and hosted by the United States. However, a future summit had not been scheduled as of April 2018. State officials told us that it is the responsibility of the White House to decide whether a North American Leaders' Summit will take place and that they therefore would not comment on whether a summit will be scheduled in 2018.

The 2016 summit, which focused on energy, formalized the *North American Climate, Clean Energy, and Environment Partnership Action Plan* (Action Plan), which included pledges to cut greenhouse gas emissions from the oil and gas sectors, boost the development of clean power, and support the development of cross-border transmission lines. However, according to State officials, implementation by each country is voluntary, because the commitments in the Action Plan are not binding. According to State officials, the National Security Council (NSC)—the agency responsible for implementing the Action Plan—has indicated that specific aspects of the plan are being reviewed to ensure alignment with the current administration's policy priorities. Officials from State, Interior, and Energy—which are among the agencies responsible for developing or implementing certain Action Plan commitments—said that, although they have continued to work with Mexico and Canada on energy-related issues, efforts to implement the plan had not been conducted since January 2017.

The United States has also engaged at the presidential level bilaterally with Mexico and Canada to address issues that include energy integration. In a February 2017 meeting—their first during the current administration—the U.S. President and the Canadian Prime Minister identified a number of areas in which the two countries agreed to cooperate, including improving energy security. As of April 2018, the current administration had not held a presidential meeting with Mexico. The previous administration held bilateral presidential meetings with both Mexico and Canada that resulted in the initiation of efforts to improve energy integration. For example, meetings in 2010 and 2011 led to the establishment of, respectively, the U.S.–Mexico High-Level Regulatory

Cooperation Council and the U.S.–Canada Regulatory Cooperation Council to help align the countries’ regulatory principles.

Ministry-Level Cooperation

The U.S. Secretaries of Energy and State cooperate with their Canadian and Mexican counterparts (i.e., ministers) through meetings focused to varying extents on energy, according to DOE and State officials. DOE cooperates with Natural Resources Canada and Mexico’s Secretariat of Energy through various bilateral and trilateral meetings that focus on energy collaboration and integration. State holds bilateral and trilateral ministry-level meetings with its Canadian and Mexican counterparts, where discussions may include energy cooperation. For example, in February 2018, State attended the North American Foreign Ministers’ Meeting in Mexico, where energy and the renegotiation of NAFTA were topics of discussion. State also co-chairs, with Commerce and the United States Trade Representative, the High Level Economic Dialogue with Mexico. However, according to Commerce officials, High Level Economic Dialogue meetings have not been held since 2016.

According to DOE officials, ministry-level meetings result in important exchanges of information and collaborative efforts. DOE officials indicated that ministry-level cooperation on energy integration with Mexico and Canada has been consistent. For example, soon after his confirmation in March 2017, the U.S. Secretary of Energy visited Mexico to initiate talks on cooperation, where he made statements recognizing Mexico’s importance both as an economic partner and, along with Canada, in promoting regional energy security. During this visit, the Secretary announced a proposal to pursue a North American energy strategy that would promote comprehensive energy and economic security for the three countries. Characterizing its development as a top priority, the Secretary stated that the North American energy strategy was meant to establish a robust trilateral work plan to guide trilateral cooperation on shared energy interests, such as developing North America’s untapped energy resources, diversifying energy supplies, and supporting the growth of each country’s energy industries. Canadian and Mexican energy officials whom we interviewed expressed agreement with the proposal to develop a North American energy strategy and indicated that a regional energy strategy would further facilitate energy integration efforts.

DOE officials stated that DOE, Natural Resources Canada, and Mexico’s Secretariat of Energy held a ministry-level meeting in November 2017—the North American Energy Ministerial—in part to discuss the proposed trilateral energy strategy. However, efforts to formalize the strategy were

subsequently suspended because of a lack of agreement on its scope, according to U.S., Canadian, and Mexican officials. Instead, the three ministries released a joint summary outlining their discussions on efforts to address regional energy security.¹³ According to DOE officials, the ministries resumed discussions of the strategy in 2018 and are continuing to work on developing either a joint energy strategy or a separate document that would accomplish the objective of such a strategy. However, Canadian officials told us that any expected document on cooperation may not be comprehensive enough to be labeled a strategy. Officials of DOE, Natural Resources Canada, and Mexican Secretariat of Energy said that, despite not having a formal North American energy strategy, the three countries maintain a cooperative ministry-level relationship.

Agency-Level Cooperation

U.S. agency staff and their counterparts in Mexico and Canada cooperate to address specific, technical issues related to North American energy integration, according to U.S., Canadian, and Mexican officials. According to DOE officials, cooperation may be trilateral or bilateral and may be led by various U.S. agencies with the required technical expertise. For example, according to DOE staff, they are working on a technical project with Canada and Mexico to improve energy import and export data that all three countries can use. According to DOE officials, involvement in agency-level technical cooperation can occur apart from higher-level strategic or political cooperation and often addresses ongoing issues essential to the industry's functioning, such as transborder industry inspections and information sharing. According to Interior officials, involvement in agency-level technical cooperation almost always occurs apart from higher-level strategic or political cooperation.

Some U.S. agencies' technical cooperation with their Mexican counterparts is more recent than their cooperation with their Canadian counterparts, according to U.S. agency officials. Officials from Interior, one of the agencies involved in providing technical assistance to Mexico, explained that since 2013, when Mexico's energy reform began allowing private investment in its oil, gas, and electricity sectors, Mexico has sought to establish regulatory frameworks and oversight mechanisms comparable to those in the United States and Canada. For example, according to Mexican officials, Interior assisted Mexico's regulatory

¹³North American Energy Ministerial, *Joint Summary, November 14-15, 2017*, accessed May 2, 2018, <https://www.energy.gov/sites/prod/files/2017/11/f46/North%20American%20Energy%20Ministerial%20Joint%20Summary.pdf>.

agencies in developing oversight regulations for their oil and gas sectors, while USAID helped Mexico’s Secretariat of Energy to plan future electricity infrastructure development and meet its clean energy goals. In contrast, U.S. agencies’ technical cooperation with Canadian agencies was already well established, according to some U.S. agency officials.

U.S. Agencies Reported Numerous Activities Related to North American Energy Integration

The eight federal agencies that we identified as having a role in North American energy integration—DOE, Interior, Commerce, State, DOT, FERC, USAID, and Treasury—reported involvement in 81 activities related to facilitating energy integration from 2014 through 2017.¹⁴ While some of these activities had multiple purposes or goals, the activities generally comprised five types: technical discussions and assistance, regulatory cooperation, international agreements and other instruments, trade promotion, and research and development.¹⁵ In addition, agencies reported having undertaken other activities, such as internal policy reviews.¹⁶ Table 1 shows the types and numbers of activities that each agency reported. (See app. III for a full listing of these agencies and descriptions of their activities¹⁷).

¹⁴For the purposes of this report, we defined “activities” as any programs, initiatives, forums, agreements, or other similar level of engagement that agencies reported as part of energy integration related efforts. U.S. agencies may conduct other activities that support North American energy integration to a certain extent, in addition to the activities that agency officials identified in response to our survey and in our interviews with them; however, we limited our review to the activities they identified. Furthermore, other agencies besides those we surveyed may engage in efforts that contribute to North American energy integration. For example, the Department of Homeland Security and the Environmental Protection Agency perform work that can be related to energy integration in some instances; however, officials of these agencies reported that they do not engage in activities that fell under the scope of our review.

¹⁵Our review of the goals, outcomes, and target populations that agencies reported in response to our survey did not identify any instances of duplication or overlap in the agencies’ activities. Duplication occurs when two or more agencies or programs are engaged in the same activities or provide the same services to the same beneficiaries. Overlap occurs when multiple agencies or programs have similar goals, engage in similar activities or strategies to achieve them, or target similar beneficiaries. For more information, see GAO, *Fragmentation, Overlap, and Duplication: An Evaluation and Management Guide*, [GAO-15-49SP](#) (Washington, D.C.: April 14, 2015).

¹⁶These activities may not include North American energy integration as a specific primary goal; however, agencies identified these activities as related to energy integration because they directly or indirectly contribute to its facilitation. Our review includes activities that agencies identified in response to our survey and in interviews.

¹⁷See app. II for information about NERC’s energy integration–related activities.

Table 1: Types and Numbers of Reported U.S. Agency Activities Related to North American Energy Integration, 2014-2017

Agency	Type of activity						Total activities
	Technical discussions and assistance	Regulatory cooperation	International agreements and other instruments	Trade promotion	Research and development	Other ^a	
DOE	19	3	3	0	2	1	28
Interior	10	0	6	0	2	0	18
Commerce	0	0	0	10	0	2	12
State	3	0	2	0	0	3	8
DOT	0	4	0	0	3	0	7
FERC	0	5	0	0	0	0	5
USAID	1	1	0	0	0	0	2
Treasury	0	0	0	1	0	0	1
Total	33	13	11	11	7	6	81

Legend: DOE = Department of Energy, Interior = Department of the Interior, Commerce = Department of Commerce, State = Department of State, DOT = Department of Transportation, FERC = Federal Energy Regulatory Commission, USAID = U.S. Agency for International Development, Treasury = Department of the Treasury.

Source: GAO analysis of agency data. | GAO-18-575

Notes: While we took steps to ensure the accuracy and completeness of the agency information provided, we did not verify that it included all programs and activities related to North American energy integration.

To avoid double-counting activities, we assigned each activity to a single category on the basis of the activity's primary objectives.

^a"Other" includes activities such as internal policy reviews.

Technical Discussions and Assistance

Several of the U.S. agencies we surveyed reported having participated in technical discussions that provided a forum for exchanging information and best practices with their Canadian and Mexican counterparts. Four agencies—DOE, Interior, State, and USAID—identified a total of 33 technical forums and assistance activities, such as consultative mechanisms, technical committees, and assistance programs. For example:

- **DOE.** Since 2015, DOE has participated with Natural Resources Canada and Mexico's Secretariat of Energy in a trilateral working group focused on carbon capture, utilization, and storage (CCUS) initiatives. According to DOE officials, the group meets twice per year to exchange information about each country's CCUS programs. DOE officials reported that the group's primary focus has included carbon-capture technologies, with an emphasis on industrial CCUS, CCUS on power systems and carbon dioxide utilization in enhanced oil recovery, and consistent and harmonized messaging regarding CCUS. DOE also engages in bilateral nuclear security cooperation

with Mexico, supporting two to three workshops with Mexico annually on topics such as nuclear security culture and cybersecurity for nuclear facilities.

- **Interior.** Since Mexico's energy reforms, Interior has held discussions with Mexican agencies about environmental and other matters related to offshore oil and gas extraction. Interior also participates in a number of international multilateral forums, including the International Regulators Forum, the International Offshore Petroleum Environmental Regulators and the International Upstream Forum, which bring together government regulators from multiple countries, including Mexico and Canada.
- **State.** State has provided technical assistance to Mexico through the Power Sector Program, which supplies guidance and training on a number of regulatory frameworks, market processes, and software tools to support Mexico's transition to a competitive power market. For example, the program has supported the development of a competitive wholesale power market through technical support to Mexico's Energy Regulatory Commission, the National Center for Energy Control, and Mexico's Secretariat of Energy.
- **USAID.** According to USAID officials, the agency's Mexico mission energy program has provided technical assistance to Mexico's Secretariat of Energy, its National Energy Control Center, its Energy Regulatory Commission, and the Federal Electricity Commission. USAID officials reported that this assistance focused on a wide range of energy-integration activities, including the design and implementation of four energy auctions, as well as the development of a public-private contract mechanism to tap private sector resources for energy-transmission construction. As part of this program, USAID also designed, and is currently managing, an activity to reduce social impacts associated with energy-infrastructure projects. USAID also provided technical assistance on grid integration and the planning and development of infrastructure, according to officials.

Regulatory Cooperation

U.S. agencies engage in regulatory cooperation to support coordination in the various energy sectors and to try to identify gaps, best practices, and inconsistencies among U.S., Canadian, and Mexican regulations. Four of the agencies we surveyed—DOE, DOT, FERC, and USAID—reported 13 regulatory cooperation efforts, including discussions between regulators and trilateral and bilateral working groups focused on the various energy sectors and the development of reliability standards. For example:

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- **DOE.** In 2011, the U.S. President and Canadian Prime Minister created the Canada–United States Regulatory Cooperation Council to facilitate closer cooperation between the countries to develop more effective approaches to regulation. As part of that effort, DOE and Natural Resources Canada have cooperated on two joint energy initiatives, according to DOE officials. First, DOE and Natural Resources Canada have cooperated on energy efficiency standards, with the goal of aligning new and updated standards and test methods for energy-using equipment through enhanced information sharing. Second, DOE and Natural Resources Canada have cooperated on developing natural gas–transportation standards. According to DOE officials, DOE and Natural Resources Canada will continue to build on previous work, facilitate the development of common codes and standards by industry organizations, and explore opportunities for alignment among stakeholders.
 - **DOT.** DOT officials reported having worked with Canadian and Mexican agencies to collaborate on regulations and standards related to various modes of transportation. For example, DOT has engaged in the North American Pipeline Safety Regulator Initiative. According to DOT’s survey response, the goal of this initiative is to share perspectives, experience, and information on regulatory activities as well as effective strategies for improving pipeline safety for each participating agency and for cross-border energy pipelines. According to officials, DOT also collaborates with Transport Canada on certain facility investigations.
 - **FERC.** FERC officials reported that FERC has represented the U.S. government at meetings of the Trilateral Electric Reliability Working Group, where U.S., Canadian, and Mexican regulators coordinate on electric grid reliability issues.
 - **USAID.** According to USAID officials, under a mechanism financed and managed by USAID, the National Association of Regulatory Utility Commissioners provided technical assistance to the Mexican Energy Regulatory Commission on energy-integration topics, such as auctions, reducing barriers to investment and competitive market restructuring.

International Agreements and Other Instruments

According to agency officials the U.S. government and individual U.S. agencies have entered into various formal agreements to engage Canada and Mexico on energy integration. Three of the agencies we surveyed—DOE, Interior, and State—identified 11 international agreements and other instruments related to North American energy integration, including several MOUs with Canadian and Mexican counterpart agencies.

According to officials, such agreements often include a framework under which bilateral and trilateral cooperation can proceed and can serve to highlight areas of priority or focus for the countries. According to one official, the MOUs are based on need and create a mechanism for technical experts to collaborate on specific topics or action items. Other officials noted that periodic renewals of MOUs can provide opportunities to decide whether agreed-on activities have been completed, are obsolete and should be discontinued, or should be continued. The following are examples of the agencies' reported activities:

- **DOE.** In 2014, DOE, Natural Resources Canada, and the Mexican Secretariat of Energy signed an MOU to further collaboration on data and information sharing and to create a trilateral framework for sharing publicly available information. The MOU outlined several areas of cooperation, including systematic comparison of energy export and import flow data; sharing of publicly available geospatial information related to utility infrastructure; exchange of views and projections of cross-border flows of natural gas, electricity, crude oil, and refined products; and development of a cross-reference for the three countries' energy sector terminology. According to DOE officials, as a result of this MOU, an integrated trilateral energy information website was launched in November 2017. The website consolidates energy-related data, integrated maps, analyses, and references from the three countries in English, French, and Spanish.
- **Interior.** Interior officials reported that since 2014, Interior has signed several binding and nonbinding instruments, including two MOUs, to facilitate cooperation with Mexico on energy and environmental matters. In 2016, Interior signed two MOUs with its counterparts in Mexico to facilitate bilateral cooperation on energy and environmental cooperation.¹⁸ Moreover, Interior helped to negotiate the Agreement between the United States and Mexico Concerning Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico, which entered into force in 2014. According to Interior officials, the department, in coordination with State, implements the agreement, which addresses the development of oil and gas reservoirs that span the international maritime boundary between the two countries in the Gulf of Mexico.
- **State.** State has played a role in finalizing a United States–Mexico agreement on peaceful nuclear cooperation, according to State

¹⁸In addition, in 2013, Interior's Bureau of Safety and Environmental Enforcement signed an MOU with the National Energy Board of Canada to share regulatory best practices.

officials. The officials said that the U.S. and Mexican governments have agreed on the final text of the agreement, which is awaiting approval by the countries' legislatures.

Trade Promotion

Commerce leads U.S. trade promotion efforts related to energy integration. In response to our survey, Commerce officials reported having engaged in at least 10 trade promotion activities and Treasury officials reported one additional effort.

- **Commerce.** Commerce activities include trade missions to Canada and Mexico, seminar and event presentations, and buyers' programs. For example, Commerce officials have organized export promotion activities targeting the Canadian and Mexican markets and led delegations of Canadian and Mexican executives to attend major U.S. trade shows in the energy sector to facilitate business partnerships with U.S. firms through its International Buyers Program. According to Commerce officials, Canadian delegations typically consist of 15 to 20 executives and Mexican delegations typically consist of 25 to 100 executives. In addition, Commerce officials reported that the department's Foreign Commercial Service in Canada has organized and staged annual country briefings and interactions with trade associations from multiple countries at two lead events—the Global Petroleum Show and the Atlantic Petroleum Show. Further, according to Commerce officials, the International Trade Administration conducted two energy-related trade missions to Mexico in 2017—a civil nuclear trade mission and a renewable energy trade mission.
- **Treasury.** Treasury's Office of Investment, Infrastructure, and Energy has formulated and negotiated a framework for energy activities with Mexico's Secretariat of Energy and the National Center for Energy Control. This energy framework is designed to achieve a high degree of energy integration, growth, and security through initiatives in the energy and infrastructure areas, to be jointly pursued by the United States and the host country partner, according to a Treasury official. The effort will involve Treasury's Office of Technical Assistance and is envisioned to include activities such as assisting the Mexican government to realize more value and impact with various procurement projects related to the energy value chains.

Research and Development

U.S. agency officials and their foreign counterparts cited research and development activities as an important aspect of cooperation to facilitate North American energy integration. Three of the agencies we surveyed—

DOE, Interior, and DOT—reported having engaged in seven scientific research and development activities. Examples include the following:

- **DOE.** DOE officials reported that the department plans to explore areas of mutual interest for trilateral cooperation in the area of civil nuclear research and development with Natural Resources Canada and Mexico’s Secretariat of Energy. In addition, DOE is engaged bilaterally with Canada in research and development on topics such as nuclear reactor technologies, including small modular reactors.
- **Interior.** In 2014, Interior’s U.S. Geological Survey issued a report on the assessment of unconventional oil and gas resources in northeast Mexico.¹⁹ In addition, Interior officials reported that the U.S. Geological Survey has collaborated with Canada on scientific research to better understand the geological framework from eastern Arctic Alaska to the Canadian Arctic Islands.
- **DOT.** DOT has engaged with its Canadian counterpart in research and development activities focused on alternative fuels. For example, DOT officials reported that its Federal Aviation Administration Center of Excellence for Alternative Jet Fuels and Environment and Canada’s Transport Canada are undertaking cooperative research and development that primarily focuses on the development of sustainable alternative jet fuels and technical research on aviation noise and emissions mitigation.²⁰

Other Efforts

Three agencies—DOE, Commerce, and State—reported engaging in a total of six other efforts related to North American energy integration. For example:

- **DOE.** A Joint U.S.–Canada Electric Grid Security and Resilience Strategy was released in December 2016. DOE and Natural Resources Canada developed this strategy and its accompanying plans to improve the grid security of the countries’ shared electric

¹⁹Department of the Interior, U.S. Geological Survey, *Assessment of Unconventional Oil and Gas Resources in Northeast Mexico, 2014*, Fact Sheet 2014-3047 (August 2014).

²⁰The Center of Excellence for Alternative Jet Fuels and the Environment, also known as the Aviation Sustainability Center, is co-led by Washington State University and the Massachusetts Institute of Technology and is funded by several U.S. agencies—the Federal Aviation Administration, the National Aeronautics and Space Administration, the Department of Defense, and the Environmental Protection Agency—as well as Transport Canada.

system. The three goals of the strategy are to protect today's electric grid and enhance preparedness, to manage contingencies and enhance response and recovery efforts, and to build a more secure and resilient future electric grid. According to DOE officials, DOE is working to implement numerous items from an accompanying action plan over multiple years.

- **Commerce and DOE.** Commerce and DOE lead the United States–Mexico Energy Business Council with their Mexican counterparts. According to Commerce officials, the council is a unique effort to gather consensus recommendations from the council's private sector representatives on ways to strengthen the economic and commercial ties between energy industries in the two countries. The council has met twice a year since its creation in 2016 and has developed a set of recommendations for consideration by U.S. and Mexican government officials. According to DOE officials, these recommendations were discussed at the Council meeting on June 15, 2018.
- **State.** State officials reported that the department is engaged in an ongoing effort to streamline its review process for presidential permit applications for cross-border energy infrastructure.

U.S. Agencies Reported Coordinating through High-Level Interagency Meetings and Working-Level Efforts

Agency officials reported coordinating their energy integration–related activities through a number of coordination efforts and mechanisms. First, an interagency working group at NSC represents a high-level interagency coordination effort. In addition, staff preparations for high-profile bilateral and trilateral summits present further opportunities for high-level interagency coordination. Moreover, agency staff engage in working-level efforts such as serving on formal coordinating bodies that bring together stakeholders in the energy sector; soliciting input from, or providing input to, other agencies; and participating in direct coordination activities at the program level.

Coordination at National Security Council Interagency Meetings

According to participating agency officials, NSC created a working group in May 2017 to facilitate formal interagency coordination on North American energy integration. Officials reported that the working group comprises representatives of NSC, DOE, Interior, Commerce, and State and has met five times since it was formed, most recently in November

2017.²¹ According to officials from participating agencies, the group's primary purpose is to bring together the key agencies that have a stake in North American energy integration and to receive guidance and input from NSC and other agencies on related activities. Consequently, the group also serves advisory, information-sharing, and coordination purposes.

We spoke with agency officials who participate in the working group, asking in particular about their experiences in several aspects that we have previously identified as key to interagency collaboration—identifying outcomes, establishing leadership, involving relevant participants and clarifying their roles and responsibilities, and obtaining necessary resources.²² Some officials noted the value of the group's meetings. The following summarizes the officials' comments.

- **Outcomes.** Officials of agencies participating in the NSC-led working group reported that it served primarily as a mechanism to promote coordination and to bring awareness of agencies' bilateral and trilateral engagement with Canada and Mexico to the NSC and to the other agencies participating in the group. Agency officials identified this high-level, in-person coordination as valuable and as one of the group's primary outcomes. For example, according to the officials, agencies contributed to, and developed, a matrix of cross-border energy activities with Mexico and Canada, which helps to make the administration and other agencies aware of each other's efforts and to see the bigger picture of those efforts. Agencies also developed a coordinated set of talking points on energy integration. One official noted that, because staff from the various participating agencies often work with the same Canadian and Mexican counterparts, coordinating the talking points is useful for ensuring that messages are presented in a consistent and substantive way.

²¹NSC did not respond to our requests for documents and an interview. However, we were able to mitigate this limitation by interviewing, and comparing the testimonial evidence of, officials from the four other agencies participating in this working group.

²²We selected the NSC-led working group for a closer review of interagency coordination because it is a high-level ongoing effort and because of its focus on issues related to energy integration with Canada and Mexico. We provided a structured set of questions to agency officials at DOE, Interior, Commerce, and State, based on key considerations for implementing interagency collaboration from prior GAO reports. The results for this group cannot be generalized to all coordination efforts on energy integration with Canada and Mexico. See GAO, *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms*, [GAO-12-1022](#) (Washington, D.C.: September 2012).

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- **Leadership.** Participating agency officials indicated that NSC has a clear leadership role in the interagency group and is responsible for calling the meetings, setting the agenda, and assigning tasks to participants. Officials noted that NSC appropriately assigned tasks based on agencies' particular expertise and capabilities. Officials also reported being generally satisfied with NSC's leadership and noted that this group has created a needed space for high-level interagency coordination.
 - **Roles and responsibilities.** Agency officials did not report any confusion about their roles and responsibilities in the NSC-led working group. According to agency officials, the agencies generally served in a primarily informational and advisory role, sharing information with each other about their respective agencies and providing input both during and outside the group's meetings. Participating agency officials are responsible for providing updates on relevant energy-related activities at each meeting. Other assigned tasks include drafting and clearing coordination documents, talking points, and policy papers.
 - **Participants.** According to participating agency officials, the agencies invited to participate in the NSC-led working group—DOE, Interior, Commerce, and State—were those with the most relevant roles related to North American energy integration. Officials noted that they communicated with each other regularly to follow up on issues raised at a meeting or as a part of normal agency coordination.
 - **Resources.** Participating agency officials generally reported that, because the NSC working group's meetings aligned with their regular and ongoing responsibilities, additional resources were not required.

Coordination in Connection with Bilateral and Trilateral Summits

Bilateral and trilateral summits can be important methods of collaboration with Mexico and Canada and also serve as episodic or event-related mechanisms for U.S. interagency coordination on energy integration-related activities. According to U.S. agency officials we interviewed, multiple agencies have provided input and advice in preparation for summits and meetings such as the North American Leaders' Summit, the North American Energy Ministerial, the North American Foreign Ministers' Meeting, and the U.S.–Mexico High Level Economic Dialogue. According to officials, broadly focused ministerial meetings such as these have included participation from multiple agencies. For example, the U.S.–Mexico High Level Economic Dialogue—a whole-of-government effort that included energy as one its priorities—led to the development of the U.S.–Mexico Energy Business Council, which is cochaired by DOE, Commerce, Mexico's Secretariat of Energy, and Mexico's Secretariat of Economy. Agency officials we interviewed stated that they also

coordinate on follow-up efforts after these meetings. For example, DOE and Commerce officials said that they conduct ongoing coordination on council business, holding weekly calls with each other and their Mexican counterparts to coordinate the council's implementation. In addition, Commerce officials told us that they report on the council's progress to other agencies at the NSC working group.

Other Interagency Coordination Efforts

Officials of multiple agencies we surveyed reported other interagency coordination efforts related to North American energy integration. These efforts included participating in formal coordinating bodies, soliciting and providing input, collaborating directly with other agencies' staff, and collaborating at U.S. embassies.

- **Participating in formal coordinating bodies.** Multiple U.S. agencies (e.g., DOT, FERC, and the Department of Homeland Security) participate in the Electricity Sub-Sector Coordinating Council, the Energy Sector Government Coordinating Council, and the Oil and Natural Gas Sector Coordinating Council, according to DOE officials. The Electricity Sub-Sector Coordinating Council's charter states that the council's purpose includes coordinating activities and initiatives designed to improve the reliability and resilience of the electricity subsector and serving as the principal liaison between the council's membership and the Energy Sector Government Coordinating Council. The Energy Sector Government Coordinating Council—the government counterpart of the Electricity Sub-Sector Coordinating Council and the Oil and Natural Gas Sector Coordinating Council — enables interagency and cross-jurisdictional coordination on planning, implementing, and executing resilience programs for the nation's critical energy infrastructure. Agency officials reported that the Oil and Natural Gas Sector Coordinating Council serves as the principal liaison between the U.S. government and representatives for oil and natural gas companies and major trade associations on matters related to oil and natural gas physical and cyber security.
- **Soliciting and providing input.** Multiple agencies reported soliciting or providing input regarding certain energy integration efforts. For example, multiple agencies contributed to the development of the U.S. Quadrennial Energy Review, which explicitly discusses North American energy integration and how to better assess and promote opportunities for better coordination between U.S., Canadian, and Mexican energy systems. In addition, DOE, State, and FERC officials reported coordinating with each other and with the Department of Defense to obtain required concurrence on presidential permit

applications. For example, when State was reviewing the presidential permit for the Keystone XL pipeline, State asked seven other agencies to provide their insights and opinions, according to State officials.

- **Collaborating directly with other agencies' staff.** Multiple agency officials reported working with other agencies as needed. For example, Treasury officials reported working with staff from State, Interior, and DOE to formulate and negotiate a framework of energy- and infrastructure-related initiatives with Mexico. Agency officials also reported that agency staff responsible for various energy integration activities have engaged in a number of informal activities—including periodic meetings, telephone calls, and e-mails—to directly coordinate these efforts with related federal and industry efforts.
- **Collaboration at U.S. embassies.** Agency officials we interviewed at the U.S. embassies in Canada and Mexico stated that they have routinely collaborated and coordinated on energy integration-related activities with staff of other relevant U.S. agencies who were also stationed at the embassies or who visited the embassies from the United States.

U.S. Agencies Obtain Feedback and Input from Private Sector and Civil Society Stakeholders through Both Formal and Informal Mechanisms

U.S. agencies reportedly obtain feedback and input from private sector and civil society stakeholders through a variety of formal and informal mechanisms. To gather this input, agencies use formalized mechanisms such as requests for public comment through the Federal Register, public hearings, public-private bodies, and joint stakeholder events. Civil society and private industries also employ informal methods to communicate their positions to agencies and individual agency staff.²³

Formal Mechanisms

U.S. agencies solicit and consider private sector and civil society input related to North American energy integration through formal mechanisms that include provisions for public comments in response to Federal Register notices; open hearings, where public comment is allowed; and public-private input entities. The Administrative Procedure Act of 1946 generally requires agencies to publish a notice of proposed rulemaking and to provide an opportunity for public comment through the Federal Register.²⁴ The private sector and civil society use this process to formally issue public statements on various topics related to energy integration. For example, with regard to the renegotiation of NAFTA, private sector entities and environmental groups have sent letters to the U.S. Trade Representative expressing their respective concerns about negotiations related to the energy sector. Agencies can also hold public hearings where stakeholders can make statements and submit data. According to the Office of the Federal Register, some agencies operate under laws that require rulemaking hearings, while others may hold public meetings to obtain public input or to help affected groups better understand the proposed rule. Moreover, Office of the Federal Register documents state

²³Civil society can provide valuable insights, and the private sector can be a driving force behind the role that the federal government plays related to energy integration. According to agency officials we spoke with, the private sector has provided the primary impetus for enhancing North American energy integration. In addition, stakeholders reported that civil society can influence the mobilization of public opinion related to certain energy integration-related activities, such as the development of the cross-border Keystone XL oil pipeline.

²⁴5 U.S.C. § 553(b).

that many agencies are beginning to use webcasts and interactive Internet sessions to broaden the audience attending public meetings. Further, under the National Environmental Policy Act, a process exists through which stakeholders can provide input during the consideration of environmental effects of proposed projects for which the agency has prepared an environmental impact statement.

Additionally, agencies may use formal public-private bodies and collaborations that gather private sector and civil society input on energy integration issues. For example, the private sector members of the U.S.–Mexico Energy Business Council are able to provide recommendations to U.S. and Mexican agencies. The council's stated objectives are to (1) bring together representatives of the respective energy industries of the United States and Mexico to discuss issues of mutual interest, particularly ways to strengthen the economic and commercial ties between energy industries in the two countries, and (2) communicate actionable, nonbinding recommendations to the U.S. and Mexican governments. According to officials, the council comprises 20 private sector representatives—10 from the United States and 10 from Mexico—and is co-chaired by DOE, Commerce, and the Mexican ministries of economy and energy. Officials reported that the council is to meet twice each year to provide consensus recommendations to both governments on ways to improve the safety and efficiency of energy-related activities, improve the commercial environment and investment climate, and enhance collective energy security.

Civil society representatives also participate in some formal advisory and information-gathering collaborations. For example, in 2015, the United States and Mexico held an energy education roundtable that brought together key stakeholders to explore possible areas for cooperation, including sharing best practices in energy education, developing vocational and polytechnic-level energy skills training programs, examining joint industry certifications, and promoting greater communication among key players in both countries. In another example, the 2016 North American Leaders' Summit announced the first annual Stakeholder Dialogue on North American Competitiveness, with a goal of providing private sector, local government, labor, and civil society representatives an opportunity to contribute ideas on increasing North American competitiveness. In response, the Wilson Center, a think tank, in coordination with the three North American governments, assembled a group of more than 40 representatives of entities engaged in North American issues. The results of this dialogue included recommendations on energy integration-related issues, such as energy infrastructure and

the U.S. presidential permitting process.²⁵ Civil society stakeholders also provide expertise by participating in activities such as the U.S.–Canada Northern Oil and Gas Research Forum. According to agency officials, this forum has typically been held every 2 years at locations in the United States and Canada since its founding in 2008 by Interior’s Bureau of Ocean Energy Management and Canada’s Indigenous and Northern Affairs Canada. The forum provides an opportunity for decision-makers, regulators, industry members, nongovernmental organizations, and scientists to discuss current scientific research and future directions for northern oil and gas activities, according to Interior officials.

Informal Mechanisms

Agencies receive input on North American energy integration from the private sector and civil society through informal mechanisms such as letters, emails, phone calls, interactions at various related events, personal connections, and reports. According to private sector and civil society representatives we interviewed, open letters (e.g., letters to the editor) and letters sent to agencies allow such groups to describe their perspectives on policy choices and advocate for preferred solutions. One civil society stakeholder noted that think tanks and trade association reports and forums also play an important role in allowing civil society and industry to communicate their perspectives and positions to Congress and federal agencies. Another civil society stakeholder reported having directly contacted State officials responsible for issuing presidential permits for the Keystone XL pipeline. Industry association representatives noted that they also have opportunities for informal meetings with agency officials at various events or through phone calls. During our discussions with civil society and private sector organizations, we heard that informal feedback or input mechanisms between stakeholders and agencies were available and functional.

²⁵Wilson Center, “NALS Stakeholder Dialogue on North American Competitiveness: Issues and Recommendations,” November 2016. More-detailed information, a full list of participants, and stakeholder submissions can be accessed at <https://www.wilsoncenter.org/NALS-dialogue>.

U.S., Canadian, and Mexican Officials Suggested Steps to Further Energy Integration but Expressed General Satisfaction with Intergovernmental Cooperation

Some of the officials we interviewed from all three countries suggested several new or additional steps that the U.S. government could take, in cooperation with Canada and Mexico, to address factors that might impede energy integration and to facilitate a more integrated and secure energy market in North America. Suggestions mentioned by officials in all three countries included aligning energy-related regulations, streamlining the U.S. presidential permitting process, facilitating cross-border transportation of equipment and workers, and involving states and provinces in energy integration efforts. However, U.S., Canadian, and Mexican officials we interviewed expressed general satisfaction with bilateral and trilateral strategic and technical cooperation regarding efforts to facilitate North American energy integration.

U.S., Canadian, and Mexican Officials Suggested Steps to Enhance North American Energy Integration

Some U.S., Canadian, and Mexican officials we interviewed suggested several new or additional steps that the U.S. government, in cooperation with Canada and Mexico, could take to address several factors that may impede energy integration and to facilitate a more integrated and secure energy market in North America. According to some officials, factors that may impede energy integration include duplicative or inconsistent energy regulations, inconsistent cross-border permitting processes, difficulties in cross-border movement of equipment and workers, and the need to involve states and provinces in transborder issues. The text box shows steps suggested by at least one official in all three countries to address these factors.²⁶

Steps Suggested by U.S., Canadian, and Mexican Officials to Further North American Energy Integration

- | |
|---|
| <ul style="list-style-type: none">• Align energy-related regulations. To reduce the burden on energy companies conducting transborder activities, align regulations, codes, and standards in appropriate sectors in all three countries, to the extent possible.• Streamline the U.S. presidential permitting process. To assure that requirements are consistently implemented, by having a set process for obtaining presidential permits for transborder energy infrastructure projects.• Facilitate cross-border movement of equipment and workers. To avoid delays in business and trade transactions, implement processes to facilitate movement of energy company personnel and equipment across borders.• Involve states and provinces in energy integration efforts. Given states' and provinces' control over local regulations, resources, and markets, increase their involvement in efforts to advance North American energy integration. |
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Source: GAO analysis of information provided by U.S., Canadian, and Mexican government officials. | GAO-18-575

²⁶Other suggestions by U.S., Canadian, or Mexican officials included continued cooperation in areas such as energy security and storage, emergency response, addressing shortages, and sharing best practices.

Align Energy-Related Regulations

U.S., Canadian, and Mexican officials suggested that the three countries should continue working together to eliminate unnecessary differences in energy sector regulations. Some officials indicated that harmonizing, when appropriate, or establishing comparable regulations, codes, and standards in all three countries could reduce the burden on energy companies conducting transborder activities and enhance regulatory cooperation.²⁷ According to some government officials and private sector representatives we interviewed, the need to align U.S., Canadian, and Mexican energy-related regulations is generally recognized by industry stakeholders as a factor that could be addressed to further facilitate regional energy integration.

Several government initiatives have been undertaken to increase alignment or reduce differences among the countries' regulatory frameworks, such as the creation of the U.S.–Canada Regulatory Cooperation Council and the U.S.–Mexico High-Level Regulatory Cooperation Council.²⁸ Nevertheless, officials in the three countries identified a need to expand efforts in certain areas. For example, according to one Canadian official, because of the large number of energy regulations, much remains to be done to align them. According to an industry association representative in Mexico, eliminating duplicative regulations is very challenging and efforts to align them have sometimes not been sufficient. For example, he explained that one company—a member of his association—embarking on a transborder project reported having to conduct extensive work to meet Mexican regulations, despite an earlier effort by Mexico's Agency for Safety, Energy, and Environment and Interior's Bureau of Safety and Environmental Enforcement to develop similar regulations for safety and environmental management systems.

Streamline the U.S. Presidential Permitting Process

Some U.S., Canadian, and Mexican government officials suggested that the U.S. government should streamline its presidential permitting process to ensure that requirements for obtaining permits for transborder energy infrastructure projects are consistently implemented. U.S. presidential

²⁷According to Interior officials, alignment or harmonization of certain regulations and standards is not appropriate in some energy sectors, such as management and regulation of upstream exploration and production of energy resources. However, the officials noted that the three countries benefit from cooperation and exchanges on management and regulatory practices in such sectors.

²⁸A purpose of these councils is to address regulatory cooperation across various economic sectors, including energy.

permits are required for the construction, connection, operation, and maintenance of certain facilities that cross the United States' borders with Canada and Mexico. Issuance or denial of permits is delegated to the U.S. Secretary of State for pipelines that transport liquids such as petroleum and petroleum products, to FERC for natural gas pipelines, and to DOE for electricity transmission lines.

Some officials in Canada and Mexico explained that industry sector representatives have expressed concerns about the process for obtaining the permits. Members of a Canadian energy association expressed concern that requirements for the presidential permits have not been implemented consistently or in a timely manner. According to a representative from the association, in some cases presidential permits have been granted in a relatively short period of time, while in other cases the process has taken over 2 years. For example, members of the Canadian energy association said that the company developing the Keystone XL pipeline spent a significant amount of money and time trying to navigate the permit process before receiving permits in March 2017. A representative from a Mexican energy association told us that, whereas Mexico's energy reforms were aimed at increasing efficiency to attract investment, the processing time for U.S. presidential permits—up to 2 years, according to the representative—can both interfere with the Mexican government's efforts and hinder more integration between the two countries.

Some U.S. government officials acknowledged a need for streamlining the presidential permitting process. State and DOE officials informed us that they had initiated internal reviews to streamline the process but that as of April 2018, these reviews were ongoing and a completion date had not been set.²⁹

Facilitate Cross-Border Movement of Equipment and Workers

U.S., Canadian, and Mexican government officials suggested implementing processes to facilitate the movement of energy company personnel and equipment across borders to reduce delays in business and trade transactions. In a discussion among stakeholders after the 2016 North American Leaders' Summit, participants agreed that there is a significant need to increase the efficiency with which cargo and individuals cross North America's land borders and that border efficiency

²⁹According to DOE officials, DOE is reviewing its implementation regulations for both presidential permits and electricity export authorizations to make the review times more predictable and efficient.

Involve States and Provinces
in Energy Integration Efforts

and the competitiveness of North America as a region are strongly linked.³⁰ In addition, a U.S. official working with small and midsize U.S. energy companies with operations in the United States and Canada told us that moving equipment and personnel across the border can be challenging. The official explained that equipment has sometimes crossed the border with minimal delays but at other times has been detained for hours or days.

Energy associations from the United States, Canada, and Mexico have advocated jointly for NAFTA negotiations to include provisions that would facilitate the movement of equipment, such as drilling rigs and vessels, and personnel—including for emergency response—across the U.S.–Canadian and U.S.–Mexican borders. These associations have also advocated for a NAFTA visa program to provide access for skilled energy professionals.

U.S., Canadian, and Mexican government officials suggested increasing the involvement of states and provinces in energy integration efforts, given their control over local regulations, resources, and markets. The roles played by states and provinces in the countries' energy sectors vary by country. Canada's system, where provinces have control over natural resources and specific related procedures such as approval process for local permits, is less centralized than the United States' system, according to a Canadian government official. In contrast, Mexico's system is more centralized than the United States', with Mexican states' having less control over natural resources, according to a Mexican government official. In addition, the official stated that, while discussion of North American energy integration often focuses on the role of national governments, the inclusion of U.S. and Mexican states and Canadian provinces—especially those on the border—in discussions of regional energy integration is essential.

Moreover, the electricity sector is particularly influenced by the participation of states and provinces because of the sector's dependence on regional markets and interconnected infrastructure, according to an electricity sector representative. For example, the representative stated that the design of Canada's electrical transmission system sometimes facilitates the transport of electricity more easily from north to south, to the United States, than from east to west, across Canadian provinces. As

³⁰Wilson Center, "NALS Stakeholder Dialogue on North American Competitiveness."

a result, U.S. markets are an important outlet for Canadian generators in eastern Canada and the Pacific Northwest.

Currently, little cross-border electricity trade takes place between the United States and Mexico, other than the importation of electricity from a few power plants in Baja California, Mexico, to supply demand in the San Diego area.³¹ A Mexican government official stated that the limited level of electricity integration between the United States and Mexico is due in part to the role of the U.S. states in regulating the electricity industry, since their regulations and plans for working with Mexico may differ. According to the official, it is therefore essential to include the states in any discussions about promoting integration of the U.S. and Mexican electricity sectors. According to USAID officials, a public-private contractual mechanism developed by USAID to tap private sector resources for constructing electricity transmission will be used for the first time to build a project to connect the Mexican state of Baja California with the rest of the Mexican grid, which had previously been isolated from Baja California and the market in the U.S. state of California. According to these officials, the transmission line could also connect the Mexican state of Sonora with the U.S. state of Arizona.

U.S., Canadian, and Mexican Officials' Views on Bilateral and Trilateral Cooperation

U.S., Canadian, and Mexican energy officials we interviewed indicated that they were generally satisfied with bilateral and trilateral strategic and technical cooperation to facilitate North American energy integration. According to U.S. officials, energy is an area in which the interests of the United States, Canada, and Mexico align and cooperation has been well established. U.S. officials also stated that trilateral cooperation works well at both the strategic and technical levels and that regional cooperation enhances energy security for all three countries. Canadian officials stated that cooperation with the United States at the strategic level has often served as a springboard for purposeful action to address shared priorities. Mexican officials stated that there has been extensive communication with the United States on energy issues, in particular at the ministerial and agency levels, which has led to activities to improve integration.

Some officials also identified changes in the overall foreign policy context that could affect cooperation in the future.

³¹Electricity trade between Texas and Mexico has also occurred but has been episodic, occurring mainly during periods of constrained supply in the Texas or Mexican transmission system and using cross-border emergency connections.

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- Some Canadian and Mexican government officials we interviewed expressed concern that the renegotiation of NAFTA and the administration’s decision to withdraw from the Paris Agreement could create uncertainty among investors in the energy sector.³² U.S., Canadian, and Mexican officials , as well as private sector representatives we interviewed, stated that they viewed NAFTA renegotiation as an opportunity to improve the agreement and that any changes to NAFTA should “do no harm” to free-trade arrangements in energy commodities. However, a Canadian official told us industry representatives had expressed concern that the issue of energy could be used as a pawn in NAFTA renegotiations, resulting in harm to the sector. Furthermore, some Mexican officials stated that they were particularly concerned that any change in Mexico’s status as a U.S. free-trade partner could complicate flows of natural gas from the United States, which has assumed a more important role as an energy source for Mexico.
 - Some Canadian and Mexican officials we interviewed expressed concern that the June 2017 announcement of the United States’ intention to withdrawal from the Paris Agreement could create a perception of an uneven playing field and uncertainty among energy sector investors, given Canada’s and Mexico’s continued participation in the accord. However, the officials noted that the commitment of some U.S. states, cities, and private sector companies to adhere to the accord’s tenets may minimize any negative impacts of the U.S. government’s withdrawal on their countries’ energy sectors. State and DOE officials we interviewed said they did not expect the U.S. renegotiation of NAFTA and withdrawal from the Paris Agreement to have a significant impact and stated that the energy sector in North America is already well integrated and well positioned to address these changes.

U.S. government officials we interviewed noted that the United States’ energy sector is already extensively integrated with both Canada’s and Mexico’s. The officials stated that most easily accomplished actions to promote integration have already been taken and that they are primarily looking for ways to enhance a system that is working well. They also stated that it is important not to disrupt the advances that have already

³²The Paris Agreement is an international agreement that entered into force on November 4, 2016. The agreement aims to, among other things, strengthen the global response to the threat of climate change. As of June 2018, there were 178 parties to the convention, including the United States. In June 2017, the United States announced its intention to withdraw from the Paris Agreement.

been made. Further, they stated that, to enhance integration, it is necessary to focus on practical steps that result in concrete changes to further facilitate cross-border production and trade.

Agency Comments and Our Evaluation

We provided a draft of this report to DOE, Interior, Commerce, State, DOT, FERC, USAID, Treasury, the Environmental Protection Agency, and the Department of Homeland Security for review and comment. We received comments from USAID, which are reproduced in appendix IV. In its comments, USAID provided additional information about the agency's contributions to North American energy integration, which we incorporated in the report as appropriate. DOE, Interior, Commerce, DOT, FERC and Treasury provided technical comments, which we also incorporated as appropriate. State, the Environmental Protection Agency, and the Department of Homeland Security informed us that they had no comments.

We are sending copies of this report to the appropriate congressional committees; the Secretaries of Energy, the Interior, Commerce, State, Transportation, the Treasury, and Homeland Security; the Executive Director of FERC; the Administrators of USAID and the Environmental Protection Agency; and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-8612 or gianopoulosk@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

Sincerely yours,



Kimberly Gianopoulos
Director, International Affairs & Trade

Appendix I: Objectives, Scope and Methodology

This report examines (1) ways in which the U.S., Canadian, and Mexican governments cooperate on North American energy integration; (2) U.S. agencies' activities to facilitate North American energy integration; (3) U.S. agencies' efforts to coordinate among themselves on North American energy integration; (4) ways in which U.S. agencies obtain feedback and input from U.S. industry and civil society regarding North American energy integration; and (5) steps that U.S., Canadian, and Mexican officials suggested to further facilitate North American energy integration.

To address these objectives, we reviewed documents and information provided by cognizant U.S., Canadian, and Mexican government officials; U.S., Canadian, and Mexican energy sector associations; and U.S. civil society groups such as think tanks and environmental nongovernmental organizations. We conducted field work in Mexico City, Mexico, and in Ottawa, Canada, where we met with government and energy sector association representatives. We also collected information on activities related to North American energy integration from U.S. agencies implementing such activities. In addition, we obtained and analyzed data from the U.S. Census Bureau regarding the extent of the United States' energy trade with Canada and Mexico.

To examine the ways in which the U.S., Canadian, and Mexican governments cooperate on North American energy integration, we interviewed officials in each country who were responsible for energy-related cooperation, asking about the processes they follow to cooperate on energy integration at the strategic and technical levels. In the United States, we spoke with officials from the Departments of Energy (DOE), State (State), Interior (Interior), Commerce (Commerce), the Treasury (Treasury), Transportation (DOT), and Homeland Security (DHS); the U.S. Agency for International Development (USAID); and the Federal Energy Regulatory Commission (FERC). We also corresponded with officials from the Environmental Protection Agency. In addition, we spoke with officials of the North American Electric Reliability Corporation. Further, we met with Canadian and Mexican embassy officials in Washington, D.C. In Canada, we met with officials from Natural Resources Canada and Global Affairs Canada and spoke with officials from the Alberta provincial government. In Mexico, we met with officials from Mexico's Secretariat of Energy; National Hydrocarbons Commission; Energy Regulatory Commission; National Gas Control Center; National Center for Energy Control; and Agency for Safety, Energy and Environment. We also reviewed documents developed to formalize bilateral and trilateral cooperation, such as the 2016 *North American*

Climate, Clean Energy, and Environment Partnership Action Plan; documents related to the U.S.–Mexico High Level Economic Dialogue; and the “2017 North American Energy Ministerial Joint Summary.”

To examine U.S. agencies’ energy integration activities implemented since 2014, we reviewed agency documents; interviewed DOE, Interior, Commerce, State, DOT, FERC, USAID, and DHS officials; and corresponded with officials from the Environmental Protection Agency. Also, in May 2018, we contacted Treasury officials after learning about recent Treasury activities related to North American energy integration.¹ In addition, we sent a survey to DOE, Interior, Commerce, State, DOT, FERC, USAID, and DHS, asking them to, among other things, identify their energy integration activities implemented from 2014 through 2017; describe each activity, including its purpose; identify the type of activity (e.g., joint research and development, trade mission, forum for technical discussion, regulatory cooperation, technical assistance, other); and identify other agencies participating in the activity. The survey also asked whether the identified activities were bilateral with Canada or Mexico, trilateral, multilateral, or unilateral. We followed up with the agencies to ask for clarifications. We did not independently determine whether the agencies had identified all relevant activities.

In addition, we reviewed agencies’ responses to identify any overlap and duplication among federal energy integration efforts. We focused on the goals and outcomes of energy integration activities as described in the agency-provided descriptions and in background material, as needed. We also focused on the activities’ target populations, or intended beneficiaries, since a bilateral U.S.–Canadian activity would have a different target population than a bilateral U.S.–Mexican activity. We compared activities within categories to look for evidence of duplication or overlap based on the description provided by the agency or other background material (i.e., agency website and documents). We determined, in accordance with GAO’s definitions of duplication and overlap, that no two of the agency activities were duplicative or

¹Treasury officials verbally reported one activity.

overlapping because the activities did not have the same or similar goals or the same or similar beneficiaries.²

To examine U.S. agencies' efforts to coordinate with each other on North American energy integration, we conducted interviews with DOE, Interior, Commerce, and State officials, asking them to identify and discuss any mechanisms, such as interagency groups, offices, activities, or initiatives, used for collaboration for the purposes of energy integration. To conduct a more detailed analysis of interagency coordination on North American integration, we interviewed participants in a National Security Council (NSC)-led interagency working group using a standard set of questions about interagency coordination and collaboration. We selected the NSC working group because it provides an example of very high-level interagency collaboration, could address multiple aspects of energy integration, and had a specific focus and effect on energy-integration efforts.³ Although we had intended to interview NSC officials, as of April 2018, NSC had not responded to our requests for documents and an interview. As a result, we were unable to include NSC views about the interagency collaboration considerations discussed. However, we were able to mitigate this limitation by interviewing and comparing the testimonial evidence of officials from the four participating agencies. We provided agency officials a structured set of questions about interagency coordination and collaboration that were based on key considerations for implementing interagency collaboration identified in a prior GAO report.⁴

To examine the ways in which U.S. agencies obtain feedback and input from U.S. industry and civil society, we conducted several informational interviews with industry associations and civil society organizations, such as think tanks and other environmental groups. To identify these organizations, we reviewed witness lists at relevant congressional and agency hearings, panel lists at energy-related conferences, and recommendations from agency officials. In addition, as we interviewed representatives of these organizations, we asked them to identify other

²Duplication occurs when two or more agencies or programs are engaged in the same activities or provide the same services to the same beneficiaries. Overlap occurs when multiple agencies or programs have similar goals, engage in similar activities or strategies to achieve them, or target similar beneficiaries. For more information, see [GAO-15-49SP](#).

³According to officials, the NSC working group was created in 2017 and, as of April 2018, had met five times since it was formed, most recently in November 2017.

⁴[GAO-12-1022](#).

groups that might provide further information. Using this approach, we interviewed representatives from seven civil society groups and 10 industry associations, including organizations based in Mexico and Canada. However, our sample was judgmentally selected and their opinions are not generalizable to all private industry and civil society stakeholders.

To report on steps suggested by U.S., Canadian, and Mexican officials to further facilitate North American energy integration, we interviewed officials in each country who were responsible for energy-related cooperation and asked them to suggest additional steps or options that the United States, in collaboration with Canada and Mexico, could take to facilitate building a more integrated and secure energy market in North America. In the United States, we spoke with officials from DOE, Interior, Commerce, State, DOT, FERC, USAID, Treasury, and DHS. We also spoke with Canadian and Mexican embassy officials in Washington, D.C. Additionally, in Canada, we spoke with officials from Natural Resources Canada, Global Affairs Canada, and the Alberta provincial government. In Mexico, we spoke with officials from Mexico's Secretariat of Energy, National Hydrocarbons Commission, Energy Regulatory Commission, National Gas Control Center, National Center for Energy Control, and Agency Energy and Environment Safety. We analyzed responses provided by officials in the three countries and identified four steps suggested by one or more officials in each of the countries: (1) aligning energy regulatory cooperation, (2) streamlining the presidential permitting process, (3) facilitating cross-border movement of equipment and workers, and (4) involving states and provinces in energy integration efforts. After identifying these four steps, we elaborated on each one by reviewing related documents and reports and discussing them with private sector representatives and researchers in nongovernmental organizations. We did not elaborate on steps suggested by U.S., Canadian, or Mexican officials that were not suggested by at least one official in all three countries.

We conducted this performance audit from April 2017 to July 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: North American Electric Reliability Corporation

The North American Electric Reliability Corporation (NERC) is a not-for-profit international corporation that plays a role in regulating and establishing reliability standards for cross-border North American electricity markets. NERC's mission is to assure the effective and efficient reduction of risks to the reliability and security of the bulk power system in the United States, Canada, and part of Mexico. While not a federal agency, in July 2006, NERC was certified by the Federal Energy Regulatory Commission (FERC) as the electric reliability organization for the United States.¹ Subsequently, compliance with NERC reliability standards became a legal requirement for certain bulk power system owners, operators, and users.² NERC is subject to oversight by FERC and governmental authorities in Canada. NERC has a trilateral focus, which enables it to more easily forge partnerships in Canada and Mexico, according to NERC officials. The officials stated that NERC's work has primarily focused on electrical grid reliability in Canada and the United States, as Mexico's electricity market was restricted until its recent reforms.

NERC identified several activities related to North American energy integration. For example:

- NERC leads GridEX, a biennial electrical grid security exercise involving industry and government from the United States, Canada, and Mexico. The exercise attempts to execute the electricity sector's emergency response to simulated cyber and physical security threats and incidents, strengthen utilities' crisis response functions, and provide input for lessons learned.
- NERC engages in regulatory cooperation with government entities in Canada and Mexico to improve the reliability of the electric grid. As the electric reliability organization certified by FERC, NERC convenes stakeholders from across the interconnected North American bulk power system to develop continent-wide reliability standards.

¹As the electric reliability organization, NERC develops reliability standards collaboratively through a deliberative process involving utilities and others in the electricity industry—which are then sent to FERC for approval.

²See e.g., *Mandatory Reliability Standards for the Bulk-Power System*, Final Rule, 72 Fed. Reg. 16,416 (Apr. 4, 2007); 72 Fed. Reg. 31,452 (June 7, 2007); *Mandatory Reliability Standards for Critical Infrastructure Protection*, Final Rule, 73 Fed. Reg. 7,368 (Feb. 7, 2008).

- NERC has entered into a number of memorandums of understanding (MOU) with Canada and Mexico. In September 2006, NERC signed an MOU with Canada's National Energy Board that committed the parties to work together to promote a reliable bulk electric system in North America through a cooperative relationship. Moreover, NERC officials stated that because electricity is the domain of Canadian provinces, NERC signed an MOU with the responsible organization in a number of provinces. Further, the Mexican government recently began to engage with NERC to bring certain areas into compliance with NERC standards, and officials reported that in March 2017, NERC and Mexico's Energy Regulatory Commission and National Center for Energy Control signed an MOU as a framework for, and to facilitate, cooperation. According to NERC officials, the MOU with these Mexico energy agencies defines roles and responsibilities, states Mexico's general commitment for Mexico to use NERC standards as a basis for Mexico's electric reliability system, and identifies some technical areas in which NERC will provide capacity-building assistance.

Appendix III: U.S. Agencies' North American Energy Integration Activities, 2014-2017

Table 2 describes activities related to North American energy integration in 2014 through 2017 reported by eight U.S. agencies—the Departments of Energy, Interior, Commerce, State, Transportation, and the Treasury; the U.S. Agency for International Development; and the Federal Energy Regulatory Commission.¹

Table 2: U.S. Agencies' Reported Activities Related to North American Energy Integration, 2014-2017

Agency	Activity title	Agency activity summary
Technical discussion and assistance		
Department of Energy (DOE)	U.S.–Canadian–Mexican trilateral cooperation in civil nuclear energy research and development	Agencies are exploring areas of mutual interest for trilateral cooperation, such as reactor technologies, spent fuel and waste disposal, and nuclear liability.
DOE	U.S.–Mexico cooperation on grid reliability under the bilateral agreement	The Energy Secretaries from Mexico and the United States, along with counterparts from the Federal Energy Regulatory Commission (FERC) and Mexico's Federal Electric Commission, signed bilateral principles for enhancement of electric grid reliability.
DOE	Bilateral nuclear security cooperation with Mexico	The National Nuclear Security Administration's Office of Global Material Security supports two to three workshops with Mexico annually on nuclear security topics such as nuclear security culture, physical protection, and cybersecurity for nuclear facilities. The main Mexican partners are the National Institute for Nuclear Research and the Laguna Verde Nuclear Power Plant.
DOE	Cooperation with Mexican Ministry of Finance and Public Credit and Mexican Customs	The National Nuclear Security Administration's Office of Global Material Security has been working with Mexico since 2014 to equip four major seaports with radiation detection systems. The office has also provided mobile detection systems for use along high-traffic smuggling routes.
DOE	Radiological security cooperation with Mexico	The National Nuclear Security Administration's Office of Global Material Security has cooperated with Mexico on radiological security since 2004 by supporting physical protection upgrades, fixed site and transportation security regulatory development, promotion of alternatives to radioactive sources, and sustainability training for the Mexican Nuclear Regulatory Agency.
DOE	Improving methane recovery from oil and gas operations	DOE held a workshop in December 2016 in Mexico to facilitate the exchange of information and best practices on improving methane recovery from oil and gas operations. A second round of workshops was proposed but had not yet been initiated as of January 2018.

¹The activities listed are those that the eight agencies reported having implemented since 2014. According to the agencies, many of the activities were ongoing as of June 2018. Descriptions of the activities were provided by the agencies.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-2017**

Agency	Activity title	Agency activity summary
Technical discussion and assistance		
DOE	North American Energy Ministers Carbon Capture, Utilization and Storage (CCUS) Initiative	The United States, Canada, and Mexico meet annually to exchange information on each country's CCUS programs. Primary focal points to date include carbon capture technologies, with an emphasis on industrial CCUS as well as CCUS on power systems, CO2 utilization in enhanced oil recovery, and consistent and harmonized messaging regarding CCUS.
DOE	Technical information exchange on unconventional oil and gas	At the North American Energy Ministers meeting in December 2014, the three countries agreed to work together on best practices for unconventional oil and gas development. Since then, four webinars on different aspects of unconventional oil and gas have taken place, the latest in January 2017
DOE	Increasing Industry Competitiveness and Productivity through International Organization for Standardization (ISO) 50001: Phases 1 and 2	North America cooperation on ISO 50001 is an initiative to promote industrial and commercial efficiency through voluntary industry adoption of the ISO 50001 energy management system standard.
DOE	Electricity Subsector Coordinating Council	The Electricity Subsector Coordinating Council serves as the principal liaison between the U.S. government and the electric power sector (including electric company executives and trade association leaders) on matters of electricity physical and cyber security. Canada is a standing member, while Mexico is not. Both Canadian and Mexican government and electric industry officials are invited to the meetings, which are held three times per year.
DOE	Energy Government Coordinating Council	The Energy Government Coordinating Council serves as the principal liaison between DOE and other U.S. government partner agencies to discuss and collaborate on energy infrastructure security issues. Canada is a standing member and invited to meetings held three times per year. The Energy Government Coordinating Council is the government counterpart to the Electricity Subsector Coordinating Council and the Oil and Natural Gas Sector Coordinating Council.
DOE	Oil and Natural Gas Sector Coordinating Council	The Oil and Natural Gas Sector Coordinating Council serves as the principal liaison between the U.S. government and representatives from oil and natural gas companies and major trade associations on matters of oil and natural gas physical and cyber security. Canada is a standing member; Canadian government and industry officials are invited to the meetings held three times per year.
DOE	U.S.–Mexico regional energy deployment systems model	DOE is partnering with Mexico's Secretariat of Energy to develop a regional energy deployment system model with Mexico. The model will analyze different scenarios for the development of the U.S.–Mexico energy grid and transmission infrastructure and assess opportunities for renewable energy integration and new ways to enhance the resiliency of the North American energy grid.
DOE	U.S.–Mexico geothermal energy collaboration	DOE is partnering with Mexico's Secretariat of Energy and Federal Electricity Commission to promote U.S. investment in Mexico's geothermal sector and the export of U.S. goods and services to Mexico.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-2017**

Agency	Activity title	Agency activity summary
Technical discussion and assistance		
DOE	U.S.–Mexico combined heat and power collaboration	DOE is partnering with Mexico's Secretariat of Energy and National Commission for Energy Efficiency to promote U.S. investment in Mexico's combined heat and power sector and the export of U.S. goods and services to Mexico.
DOE	North American Renewable Integration Study	The North American Renewable Integration Study is exploring the potential to increase the use of intermittent generation across the continent. The study is a collaborative effort of DOE, Natural Resources Canada, and Mexico's Secretariat of Energy, and stakeholders from all three countries will help guide and review the study.
DOE	Energy Modeling Forum Outlooks Exercise on North American Energy	Stanford University is facilitating a multiyear study on modeling the integrated energy systems of North America. This effort includes participation from modelers across all three countries and will compare model design, assumptions, and outlook results.
DOE	Export control cooperation with Mexico (bilateral and regional)	The National Nuclear Security Administration's International Export Control program supports the government of Mexico's weapons of mass destruction–related export control implementation efforts by training enforcement and licensing officials to identify dual-use commodities and mitigate the risk of diversion of such weapons.
DOE	Nuclear Security Support Center—cooperation with Mexico and Canada	The National Nuclear Security Administration's Office of Global Material Security has coordinated with Mexico, Canada, and the International Atomic Energy Agency to establish a Nuclear Security Support Center in Mexico.
Department of the Interior (Interior)	Communication with Canada on offshore wind	The Canadian federal government is working to develop a legislative framework for offshore renewable energy in Canada's territorial waters. On one occasion, officials at Interior's Bureau of Ocean Energy Management spoke with officials at Natural Resources Canada to assist with its future legislative framework, according to Interior officials.
Interior	Science in support of State's Energy Governance and Capacity Initiative	Interior's U.S. Geological Survey provides research, information, and assessments of undiscovered, technically recoverable oil and gas resources for onshore U.S., state-owned, and international waters, exclusive of the U.S. outer continental shelf. State, working through Interior's International Technical Assistance Program and the U.S. Geological Survey Energy Program, has created a prioritized list of countries and the corresponding technical geologic training that can improve the scientific understanding of energy resource estimation and development.
Interior	Cooperation, coordination, and information-sharing on environmental matters related to offshore hydrocarbon activities in the Gulf of Mexico	Interior's Bureau of Ocean Management coordinates on a bilateral basis with counterpart Mexican agencies, associated with offshore oil and gas.
Interior	Communication with Mexico on nonenvironmental offshore oil and gas topics	The Bureau of Ocean Management communicates with Mexico's National Hydrocarbons Commission on upstream offshore oil and gas issues on a periodic basis.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-2017**

Agency	Activity title	Agency activity summary
Technical discussion and assistance		
Interior	International Upstream Forum	The International Upstream Forum meets annually to bring together international government regulators to discuss current offshore oil and gas issues, policy challenges, and best practices. Forum participants represent those parts of national and provincial governments that manage offshore oil and gas exploration and development through resource assessment; the granting of exploration, development, and production licenses; and other upstream management or regulatory activities. Other member countries include Canada and Mexico's National Hydrocarbons Commission.
Interior	International Offshore Petroleum Environmental Regulators	International Offshore Petroleum Environmental Regulators is a group of national and provincial government environmental regulators focused on improving environmental performance and oil spill preparedness in the global offshore petroleum exploration and production industry. Both Canada and Mexico are members. The group holds annual general meetings and occasionally also holds midyear meetings.
Interior	Arctic Offshore Regulators Forum	The Arctic Offshore Regulators Forum is a group of offshore energy safety and environmental regulators who focus on improving offshore safety, environmental management and stewardship in the Arctic by exchanging information, best practices and experiences. The group was formed in 2015 as a result of recommendations from an Arctic Council working group. Interiors' Bureau of Safety and Environmental Enforcement and Canada's National Energy Board were founding members and are active participants.
Interior	International Regulators Forum	The International Regulators Forum is a group of offshore oil and gas safety regulators from 10 countries. It seeks to advance improvements in offshore safety and environmental performance through collaboration and information sharing. The National Energy Board and Mexico's Agency for Safety, Energy, and Environment participate as well.
Interior	U.S.-Canada Northern Oil and Gas Research Forum	Alternating between the United States and Canada, the forum provides an opportunity for decision-makers, regulators, industry members, nongovernmental organizations, and scientists to discuss current scientific research and future directions for northern oil and gas activities.
Interior	International technical assistance program support of Energy Governance and Capacity Initiative and Unconventional Gas Technical Engagement Program Programs	Since 2010, Interior's International Technical Assistance Program has supported two State programs in Mexico on the development of conventional and unconventional oil and gas resources: the Energy Governance and Capacity Initiative and the Unconventional Gas Technical Engagement Program.
Department of State (State)	U.S.-Canada Energy Consultative Mechanism	The U.S.-Canada Energy Consultative Mechanism facilitates bilateral discussion of key energy issues, including energy trade, energy security, and the foreign affairs implications of our energy production. Canada and the United States also seek to coordinate on energy initiatives in third countries.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-2017**

Agency	Activity title	Agency activity summary
Technical discussion and assistance		
State	Energy Governance and Capacity Initiative and Unconventional Gas Technical Engagement Program	Since 2012, Energy Governance and Capacity Initiative and Unconventional Gas Technical Engagement Program assistance has utilized the U.S. government's expertise at Interior and U.S. Coast Guard as well as leading U.S. academic institutions to support the government of Mexico's efforts to implement energy reforms aimed at improving oil and gas sector governance and attracting outside investment.
State	Power Sector Program	Since 2015, State's Power Sector Program has provided assistance to the government of Mexico. This program provides guidance and trainings on numerous regulatory frameworks, market processes, and software tools for Mexico's transition to a competitive power market.
U.S. Agency for International Development (USAID)/State^a	USAID Mexico mission's energy program	USAID Mexico mission's energy program works with the Mexican government to plan electricity infrastructure, facilitate economic growth, and advance progress toward Mexico's energy and emission targets. USAID works closely with the private sector to facilitate financing for electricity infrastructure and support new technologies for a clean and prosperous regional economy. In late 2017, State agreed to provide funding for this program.
Regulatory cooperation		
DOE	Trilateral and U.S.–Canada bilateral, cooperation on energy efficient equipment standards	DOE, Natural Resources Canada, and the Mexican National Commission for Energy Efficiency are collaborating to align new and updated energy efficiency standards and test methods for energy-using equipment. DOE and Natural Resources Canada are also working bilaterally on the same topic through the U.S.–Canada Regulatory Cooperation Council.
DOE	U.S.–Canada alternative fuel use in transportation	DOE and Natural Resources Canada are working to facilitate the use of alternative fuels (e.g., natural gas, propane, hydrogen and electricity) in the U.S.–Canada transportation system by aligning and developing codes and standards.
DOE	Regulatory Side-by-Side Governing Permitting of Cross-Border Electricity Transmission Facilities between the United States and Canada	In 2015, DOE released a document that presents a series of side-by-side tables that describe the U.S. and Canadian regulatory and statutory requirements necessary to site, permit, and construct transmission facilities at the U.S.-Canada border. It was intended to function as a reference document that can be used by government officials, potential developers, and other stakeholders as a means to understand the permitting requirements in both countries.
Department of Transportation (DOT)	Cylinder reciprocity with Canada	DOT's Pipeline and Hazardous Material Safety Administration amended its hazardous materials regulations to allow the transportation, filling, and requalification of cylinders authorized by Transport Canada that also meet DOT requirements. The amendment was intended to promote greater alignment of U.S. and Canadian transport requirements.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-1017**

Agency	Activity title	Agency activity summary
Regulatory cooperation		
DOT	Recognition of inspection and repairs under U.S. requirements for highway transport	<p>With the March 2017 publication of HM-215N, Harmonization with International Standards, cargo tanks found to be damaged may be repaired and marked in Canada or the United States regardless of where the tanks were made. Harmonization of the United States Hazardous Materials Regulations with Canada authorizes the "repair" (generally defined as welding done on a cargo tank wall) of a DOT-specification cargo tank used for the transportation of hazardous materials in the United States to be performed by a facility in Canada that holds a valid Certificate of Authorization from a provincial pressure vessel jurisdiction for repair.</p> <p>According to DOT officials, this authorization reduces barriers to free trade; harmonizes energy regulations between the United States and Canada; and coordinates cross-border energy trade infrastructure, by providing flexibility to United States motor carriers to obtain necessary repairs of DOT-specification cargo tanks used in cross-border transportation.</p>
DOT	Cargo tank manufacturer and facility reviews and investigations	The United States and Canada cooperate and collaborate with respect to ensuring safety and compliance in the manufacture and qualification of specification cargo tanks. In conjunction with the routine oversight of these facilities, or when a compliance issue is discovered, each country will conduct a review or investigation of the facility. If the United States conducts an investigation of a DOT-specification cargo tank facility in Canada, the Federal Motor Carrier Safety Administration engages Transport Canada to collaborate and assist in the investigation, particularly in cases where compliance with both country's regulations is in question. Likewise, if Canada investigates a cargo tank facility in the United States, Transport Canada engages the Federal Motor Carrier Safety Administration for collaboration and assistance.
DOT	North American Pipeline Safety Regulator Initiative	The initiative's goal is to share perspectives, experience, and information on regulatory activities and effective strategies for improving pipeline safety for each participating agency individually and for cross-border energy pipelines.
Federal Energy Regulation Commission (FERC)	Bilateral Principles to Promote the Reliability and Security of the Interconnected Power Systems of the United States and Mexico	The development of a principles document to promote cross-border electric grid reliability.
FERC	Memorandum of understanding (MOU) and discussions with Mexico's Energy Regulatory Commission regarding sharing information about regulatory experiences and practices	Discussions and information sharing with Mexico's Energy Regulatory Commission on a variety of topics related to electric and natural gas system planning, markets, integration of renewables, and smart grid development.
FERC	Discussions between FERC and Mexico's Energy Regulatory Commission on reliability	Ad hoc discussions between FERC and Mexico's Energy Regulatory Commission regarding development of a Mexican grid reliability program.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-2017**

Agency	Activity title	Agency activity summary
Regulatory cooperation		
FERC	Trilateral Electric Reliability Working Group	U.S., Canadian, and Mexican regulators meet to coordinate on electric grid reliability issues. A representative of the North American Electric Reliability Corporation also attends to provide briefings on reliability issues. The group conducts conference calls to discuss reliability issues and meets in person bi-annually.
FERC	Trilateral meetings of FERC, Canada's National Energy Board, and Mexico's Energy Regulatory Commission	FERC, Canada's National Energy Board, and Mexico's Energy Regulatory Commission meet to discuss cross-border infrastructure projects and compare best practices on issues such as infrastructure and outreach.
USAID	Assistance to Mexico's Energy Regulatory Commission	Under a mechanism financed and managed by USAID, the National Association of Regulatory Utility Commissioners provided technical assistance to Mexico's Energy Regulatory Commission on energy-integration topics, such as auctions, reducing barriers to investment, and competitive market restructuring.
International agreements and other instruments		
DOE	Data sharing agreement between the United States and Canada	The Energy Information Administration has a data-sharing agreement with the National Energy Board of Canada. The Energy Information Administration and the board share data related to work on energy outlooks. Quarterly teleconferences are held to discuss current market issues and assumptions for analysis.
DOE	Cooperation with Canadian Nuclear Safety Commission	The National Nuclear Security Administration's Office of Global Material Security has worked with the Canadian Nuclear Safety Commission since 2014 on nuclear forensics.
DOE	North American cooperation on energy information	Trilateral consultation and sharing of energy information for the North American region to (1) improve respective energy import and export data; (2) share publicly available geospatial information related to energy infrastructure; (3) exchange views and projections on cross-border energy flows; and (4) develop a cross reference for terminology, concepts, and definitions
Interior	MOU Regarding Cooperation Between the Bureau of Safety and Environmental Enforcement and National Energy Board of Canada	Interior's Bureau of Safety and Environmental Enforcement and Canada's National Energy Board share regulatory best practices and coordinate on improving safety in offshore oil and gas development. Activities include meetings and exchanges of information. The MOU was signed in February 2013 and expired in February 2018. The two entities have mutually agreed to continue their collaboration and cooperation absent a formal MOU.
Interior	MOU on environmental conservation	The MOU between Interior and Mexico's Secretariat of Environment and Natural Resources was signed in February 2016. The MOU establishes a vehicle for identifying, facilitating, and strengthening bilateral cooperation and working jointly on the protection, sustainable use, management, conservation, and restoration of the environment.
Interior	MOU on energy cooperation	The MOU between Interior and Mexico's Secretariat of Energy was signed in February 2016. The MOU establishes a vehicle for strengthening cooperative activities regarding safe, efficient, economic, and environmentally responsible assessment, exploration, development, and production of energy resources and energy.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-2017**

Agency	Activity title	Agency activity summary
International agreements and other instruments		
Interior	Agreement between the United States of America and the United Mexican States Concerning Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico	The agreement sets out a framework for cooperating on joint exploration and exploitation of geological hydrocarbon structures and reservoirs that extend across the maritime boundary of the United States and Mexico, all of which are located beyond 9 nautical miles from the coastline. In coordination with State, the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement implement the agreement for the United States. The agreement was negotiated by State and the Mexican Foreign Ministry, with support from Interior and Mexico's Secretariat of Energy.
Interior	Cooperation with Mexico's Agency for Safety, Energy, and Environment and National Hydrocarbons Commission on offshore safety and environmental performance	Interior's Bureau of Safety and Environmental Enforcement and Mexico's Agency for Safety, Energy, and Environment began to engage before the Mexican agency officially opened in March 2015. The scope of this relationship was agreed to in a October 2015 letter of intent and formalized with an October 2016 MOU. The agencies communicate regularly and have held phone conferences, meetings, and workshops. Subjects include, among others, safety and environmental management systems and oil-spill preparedness. Consideration is being given to the development of a work plan on issues of common responsibility.
Interior	Letter of Intent between the Bureau of Ocean Energy Management and Mexico's Agency for Safety, Energy, and Environment	In October 2016, the Bureau of Ocean Management and Mexico's Agency for Safety, Energy, and Environment signed a letter of intent documenting their intent to strengthen cooperation, coordination, and information sharing on environmental matters related to offshore hydrocarbon activities in the Gulf of Mexico.
State	U.S.–Mexico Agreement on Peaceful Nuclear Cooperation	Finalizing the U.S.–Mexico Agreement on Peaceful Nuclear Cooperation. Final text was agreed in November 2016 but, as of January 2018, awaited final approval from both governments.
State	North American Climate, Clean Energy, and Environment Partnership	This partnership was launched as part of the 2016 North American Leaders' Summit, which included high-level commitments related to clean-energy generation and reductions in methane emissions from oil and gas by 2025. The summit also included action plans on advancing clean and secure energy; improving energy efficiency; accelerating clean energy innovation and cooperation; strengthening grid security; driving down short-lived climate pollutants; promoting clean and efficient transportation; showcasing global climate leadership; promoting energy security in the Americas; and protecting nature and advancing science.
Trade promotion		
Department of Commerce (Commerce)	North American Clean Energy Partnership Initiative	The North American Clean Energy Partnership Initiative promotes business linkages among clean-energy technology companies in the United States, Canada, and Mexico, particularly small and midsize enterprises. The initiative also aims to connect North American small and midsize enterprises to multinational supply chain opportunities and facilitate access to government and multilateral development bank procurement tenders.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-1017**

Agency	Activity title	Agency activity summary
Trade promotion		
Commerce	Renewable energy integration trade mission to Canada	Eight U.S. developers of technologies for integration of renewable energy into utility and industrial power grids took part in workshops and commercial discussions in Toronto and Calgary. Presenters included provincial officials from Alberta, Saskatchewan, Manitoba, and Ontario. Participants were from the region's First Nations, industry, and utility companies.
Commerce	Energy-themed seminar presentations in the United States	Foreign Commercial Service Mexico organizes opportunities for Mexican public and private sector individuals to deliver presentations to U.S. companies in the United States. Recent presentations in Houston, Texas; Chicago, Illinois; and San Diego, California have included Mexican agencies and large energy firms.
Commerce	U.S. government workshop on deploying clean energy technologies in Mexico	An International Trade Administration Director led a workshop that brought together experts from multiple U.S. agencies to discuss their services and answer questions regarding ways that they could support Mexico's efforts to develop its renewable energy resources.
Commerce	Renewable Energy Trade Mission to Mexico	The Deputy Undersecretary for International Trade led a delegation of eight renewable energy companies to Mexico. The companies offered renewable energy technologies, engineering services and energy storage. The delegation met with key government agencies for the electricity market in Mexico.
Commerce	Civil nuclear trade mission to Mexico	Participants from 16 U.S. companies, leaders from the Nuclear Energy Institute, and DOE joined the mission on stops in Mexico City and the Laguna Verde Nuclear Facility in the state of Veracruz. The mission provided U.S. company executives with a broad overview of opportunities in Mexico's civil nuclear sector and key contacts with whom they can develop future business.
Commerce	Energy Focused International Buyer Programs in Mexico	Commerce's Foreign Commercial Service in Mexico leads delegations of Mexican executives to major U.S. trade shows in the energy sector to facilitate business partnerships with U.S. firms. Delegations typically consist of 25 to 100 Mexican executives.
Commerce	Canada's leading, in-country sector events	Commerce's Foreign Commercial Service in Canada organizes and stages annual country briefings and interactions with trade associations from multiple countries at two lead events: Global Petroleum Show (Calgary, Alberta) and Atlantic Petroleum Show (St. John's, Newfoundland).
Commerce	International Buyer Program selected trade events in United States	Commerce Foreign Commercial Service in Canada leads delegations of Canadian executives to major U.S. trade shows in the energy sector in order to facilitate business partnerships with U.S. firms. Delegations typically consist of 15 to 20 Canadian decision makers from all sectors of oil and gas.
Commerce	Arctic Oil & Gas Symposium	Commerce's Foreign Commercial Service in Canada was invited to speak on Commercialization of Energy/Renewable Energy Resources in the Arctic/Far North at this gathering in Calgary of executives from oil and gas companies and government leaders and representatives from northern communities and provincial governments.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-2017**

Agency	Activity title	Agency activity summary
Trade promotion		
Treasury	U.S.–Mexico Energy Investment initiative	Treasury reached a negotiated agreement on a framework with Mexico's Secretariat of Energy and National Center for Energy Control. Under the framework, various initiatives, designed to achieve a high degree of energy integration, growth, and security in the energy and infrastructure areas, will be implemented.
Research and development		
DOE	Cooperation on optimization of grid tied energy storage services and reliability testing of battery systems	DOE and the Wind Energy Institute of Canada are collaborating on integration of energy storage systems and use with wind energy. DOE and the National Research Council Canada are developing uniform testing guidelines establishing the reliability of redox flow battery systems.
DOE	U.S.–Canada Civil Nuclear Energy Research and Development Collaboration	Enhance civil nuclear energy research and development collaboration through a DOE–Natural Resources Canada–Atomic Energy Canada Ltd. collaborative action plan that serves as the blueprint for bilateral collaboration in (1) reactor technologies, including small modular reactors; (2) light-water reactor and heavy-water reactor sustainability; (3) advanced nuclear fuels and fuel cycles; and (4) modeling and simulation.
Interior	Science in support of State Department Unconventional Gas Technical Engagement Program	Interior's U.S. Geological Survey provides research, information, and assessments of undiscovered, technically recoverable oil and gas resources for onshore U.S., state-owned, and international waters, exclusive of the U.S. outer continental shelf, which is the purview of the Bureau of Ocean Energy Management. In support of State's Unconventional Gas Technical Engagement Program, U.S. Geological Survey completed an "Assessment of unconventional oil and gas resources in Northeast Mexico" in 2014.
Interior	Scientific collaborations with the Geological Survey of Canada	Scientific research collaborations to better understand the geological framework from eastern Arctic Alaska, across the Mackenzie Delta, and onto the southern passive margin of the Canadian Arctic Islands.
DOT	Aircraft and propulsion system alternative fuels research	Collaborative research in the area of alternative fuels and its effects on aircraft and propulsion systems, and includes testing of unleaded piston aviation fuels for the replacement of the current 100LL (i.e., low lead) leaded aviation gasoline.
DOT	Federal Aviation Administration's Center for Excellence for Alternative Jet Fuels and Environment: Aviation Sustainability Center	Transport Canada Civil Aviation and DOT's Federal Aviation Administration undertake cooperative research and development that primarily focuses on the development of drop-in sustainable alternative jet fuels and technical research on aviation noise and emissions mitigation.
DOT	Crude Oil Characteristics Research Study	DOT, DOE, and Transport Canada have cosponsored a multiyear, multiphase research study by Sandia National Laboratories to understand the hazards associated with transporting crude oil by rail.

**Appendix III: U.S. Agencies' North American
Energy Integration Activities, 2014-2017**

Agency	Activity title	Agency activity summary
Other activities		
DOE	Joint U.S.-Canada Electric Grid Security and Resilience Strategy and corresponding U.S. and Canadian Action Plans	Following agreement by U.S. and Canadian leaders, DOE, Department of Homeland Security, Natural Resources Canada, and Public Safety Canada engaged in the development of the joint strategy and each nation's action plan to improve grid security of the shared electric system. The three goals of the strategy are to (1) protect today's electric grid and enhance preparedness, (2) manage contingencies and enhance response and recovery efforts, and (3) build a more secure and resilient future electric grid.
Commerce	U.S.-Mexico High Level Economic Dialogue	President Obama and President Peña Nieto established the High Level Economic Dialogue in 2013. The dialogue built on, but did not duplicate, a range of existing successful bilateral dialogues and working groups and was envisioned as a mechanism to advance shared strategic priorities in promoting competitiveness and connectivity; fostering economic growth, productivity, and innovation; and partnering for regional and global leadership. The last meeting took place in December 2016.
Commerce	U.S.-Mexico Energy Business Council	Composed of 20 private sector representatives from the United States and Mexico, the council meets twice a year to provide consensus recommendations to both governments on ways to improve the safety and efficiency of energy related activities, improve the commercial environment and investment climate, and enhance collective energy security.
State	North American Leaders' Summit	The annual North American Leaders' Summit is the overarching mechanism supporting North American cooperation. It is supported by regular minister-level meetings between the Departments of State, Commerce, Defense, Energy, Justice, and the Interior; the Environmental Protection Agency; and their Canadian and Mexican counterparts.
State	North American Foreign Ministers' Meeting	This cabinet-level meeting has included discussion of energy cooperation and security as well as climate change.
State	Presidential permitting review process	State is engaged in efforts to streamline its review process of presidential permit applications for cross-border energy infrastructure in support of national interest determination by decision maker with delegated presidential authority under Executive Order 13337.

Source: Agency data submissions. | GAO-18-575

Note: The activities listed are those that the eight agencies reported having implemented since 2014. According to the agencies, many of the activities were ongoing as of June 2018. Descriptions of the activities were provided by the agencies.

^aDuring our October 2017 visit to Mexico City, State officials informed us that State, rather than USAID, would now be funding this activity.

Appendix IV: Comments from U.S. Agency for International Development



JUN 29 2018

Kimberly Gianopoulos
Director, International Affairs and Trade
United States Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: NORTH AMERICAN ENERGY INTEGRATION: Information on Cooperation with
Canada and Mexico and among U.S. Agencies (GAO-18-575)

Dear Ms. Gianopoulos:

I am pleased to provide the formal response of the United States Agency for International Development (USAID) to the draft report of the U. S. Government Accountability Office (GAO) entitled, "*NORTH AMERICAN ENERGY INTEGRATION: Information on Cooperation with Canada and Mexico and among U.S. Agencies*" (GAO-18-575).

We hope the final version of the report can reflect USAID's significant contributions to North American energy integration, as presented in the attached comments section. While the report does not include any recommendations for USAID, we stand ready to support continued North American energy integration through the authorities and resources provided to our Agency.

I am transmitting this letter and the enclosed USAID comments for incorporation as an appendix to GAO's final report. Thank you for the opportunity to respond to your draft report, and for the courtesies extended by your staff while conducting this engagement.

Sincerely,

A handwritten signature in blue ink, appearing to read "Angelique M. Crumbly". The signature is stylized and overlaps with the typed name below it.

Angelique M. Crumbly
Acting Assistant Administrator
Bureau for Management

Enclosure: a/s

The enclosure contained technical comments, which we incorporated as appropriate.

Appendix V: GAO Contact and Staff Acknowledgements

GAO Contact

Kimberly Gianopoulos, (202) 512-8612 or gianopoulosk@gao.gov.

Staff Acknowledgements

In addition to the contact named above, Kim Frankena (Assistant Director), Francisco M. Enriquez (Analyst-in-Charge), Brian Tremblay, Martin De Alteriis, Philip Farah, Christopher Keblitis, Reid Lowe, Grace Lui, Franklin Rusco, and Sarah Veale made key contributions to this report.

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