



ADVANCING U.S. COAL EXPORTS

An Assessment of Opportunities
to Enhance Exports of U.S. Coal

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Report Request from Energy Secretary Rick Perry



The Secretary of Energy
Washington, DC 20585

January 07, 2018

Mr. Greg Workman
Chair, National Coal Council
1101 Pennsylvania Avenue, NW, Suite 300
Washington, DC 20004

Dear Mr. Workman:

I am writing today to request that the National Coal Council (NCC) develop a white paper assessing opportunities to advance U.S. coal exports.

The white paper should focus on current market, policy, and infrastructure challenges and opportunities that are relevant to advancing U.S. coal resources in international power and industrial markets. The white paper should examine international market opportunities for both metallurgical and thermal coals from the Eastern, Central, and Western coal-producing regions of the U.S. The white paper should also provide a competitive assessment of the coal market supply chain and associated infrastructure, and offer recommendations that address key barriers impeding the export of U.S. coal.

The key questions to be addressed include:

- What market, infrastructure, and policy measures could be undertaken to increase export opportunities for U.S. coal?
- What global market dynamics present opportunities for increased U.S. coal exports?
- How can U.S. coal capitalize on its advantages and become more competitive in international markets?
- What institutional and regulatory constraints are limiting the advancement of U.S. coal exports?

The white paper should be managed under the auspices of the Executive Advisory Board within the NCC. I ask that the white paper be completed no later than March 30, 2018.

Upon receiving this request and establishing your internal working groups, please advise me of your schedule for completing the white paper. The Department looks forward to working with you on this effort.

Sincerely,

A handwritten signature in black ink that reads "Rick Perry". The signature is written in a cursive, slightly stylized font.

Rick Perry



October 22, 2018

The Honorable Rick Perry
U.S. Secretary of Energy
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dear Mr. Secretary:

On behalf of the members of the National Coal Council (NCC), I am pleased to submit to you, pursuant to your letter dated January 7th, 2018, the report "Advancing U.S. Coal Exports: An Assessment of Opportunities to Enhance Exports of U.S. Coal." Consistent with your request, the report is focused on assessing and prioritizing market, infrastructure and policy measures that can be undertaken to increase export opportunities for U.S. coal. Additionally, the report provides a competitive assessment of U.S. coal export opportunities relative to other supplier nations, as well as an analysis of prospective international markets for U.S. coal.

As domestic demand for coal has softened, coal exports are an increasingly important market sector for U.S. coal producers. U.S. coal exports have been very volatile over the years, ranging from a peak in 2012 of 125 million tons to a low of 39 million tons in 2002. This volatility is attributable to many factors, including fluctuations in market demand, competition from global suppliers and various importing nation constraints, such as policies limiting coal imports and infrastructure restrictions. While many of these variables are outside the control of the U.S. government and industry, there are numerous factors which can be addressed by policymakers and commercial interests to enhance U.S. coal exports.

The competitiveness and growth of U.S. coal exports depends primarily on the ability of U.S. producers to mine and ship coal to end-use markets at an overall delivered cost that is economically competitive with other global coal suppliers and other energy resources. The NCC report highlights opportunities and barriers to coal exports in the areas of U.S. coal production, transportation/shipping, international coal plant financing and trade.

Coal Production. Development and deployment of advanced coal mining and processing technologies to reduce production costs would enhance the competitiveness of U.S. coals in international markets. Federal and state support mechanisms would facilitate continued operation in traditional supply regions and the development of infrastructure projects in non-traditional coal-producing regions in the U.S.

River Transport. Streamlining of funding for the nation's inland waterway system of locks and dam infrastructure would facilitate the cost-efficient flow of U.S. coals to international markets via East and Gulf Coast ports.

Ports & Terminals. Dredging and channel deepening at East and Gulf Coast ports would allow for the accommodation of larger ships, thereby lowering shipping costs and enhancing the delivered economics of U.S. coals in international markets. The development of West Coast export terminals would be enhanced with improved planning and cooperation between federal and state authorities responsible for environmental review/permitting and through reforms to NEPA and related permitting processes. NCC encourages the further study of opportunities to reduce export constraints through development of export terminals on federal properties.

International Coal Plant Financing. Financing of coal facilities overseas is hampered by domestic and international policy barriers at the Export-Import Bank of the U.S. (EXIM), the Overseas Private Investment Corporation (OPIC) and Multilateral Development Banks (MDB) administered by the U.S. Treasury Department.

To facilitate these and other recommendations to enhance U.S. coal exports detailed in the NCC report, we advocate for the establishment of a DOE-led, government-wide Coal Exports Task Force (or Energy Exports Task Force) to monitor and coordinate policy developments relevant to advancing U.S. energy exports. Participants should include all agencies engaged in energy development and international relations, including the U.S. Departments of Energy, Interior, State and Treasury, as well as the U.S. Trade and Development Agency (USTDA), OPIC and the EXIM Bank, among others.

Advancing U.S. exports is a critical component of the nation's efforts to achieve U.S. energy dominance, enhance international energy security and support our allies in eliminating global energy poverty. Thank you for the opportunity to prepare this report. The Council stands ready to address any questions you may have regarding its findings and recommendations.

Sincerely,

A handwritten signature in black ink, reading "Deck A. Slone". The signature is fluid and cursive, with the first name "Deck" and last name "Slone" clearly legible.

Deck Slone
National Coal Council Chair 2018-2019



NCC Overview - 1984|2018

In the fall of 1984, Secretary of Energy Don Hodel announced the establishment of the National Coal Council (NCC). In creating the NCC, Secretary Hodel noted that “The Reagan Administration believes the time has come to give coal – our most abundant fossil fuel – the same voice within the federal government that has existed for petroleum for nearly four decades.”

The Council was tasked to assist government and industry in determining ways to improve cooperation in areas of coal research, production, transportation, marketing and use. On that day in 1984, the Secretary named 23 individuals to serve on the Council, noting that these initial appointments indicate that “the Department intends to have a diverse spectrum of the highest caliber of individuals who are committed to improving the role coal can lay in both our Nation’s and the world’s energy future.”

Throughout its nearly 35-year history, the NCC has maintained its focus on providing guidance to the Secretary of Energy on various aspects of the coal industry. NCC has retained its original charge to represent a diversity of perspectives through its varied membership and continues to welcome members with extensive experience and expertise related to coal.

In 1985, the NCC was incorporated as a 501c6 non-profit organization in the State of Virginia. Serving as an umbrella organization, NCC, Inc. manages the business aspects of running the Council. The leadership of the NCC serves as officers of NCC Inc. and members of the Council serve as NCC Inc. shareholders. The Executive Director of the Council is NCC Inc.’s Executive Vice President and Chief Operating Officer.

Today, the NCC continues to serve as an advisory group to the Secretary of Energy, chartered under the Federal Advisory Committee Act (FACA). The NCC provides advice and recommendations to the Secretary of Energy on general policy matters relating to coal and the coal industry.

The Council activities include providing the Secretary with advice on:

- Federal policy that directly or indirectly affects the production, marketing and use of coal;
- Plans, priorities and strategies to address more effectively the technological, regulatory and social impact of issues relating to coal production and use;
- The appropriate balance between various elements of Federal coal-related programs;
- Scientific and engineering aspects of coal technologies, including emerging coal conversion, utilization or environmental control concepts; and
- The progress of coal research and development.

The principal activity of the NCC is to prepare reports for the Secretary of Energy. The NCC’s Coal Policy Committee develops prospective topics for the Secretary’s consideration as potential subjects for NCC studies. During its nearly 35-year history, the NCC has prepared more than 35 studies for the Secretary, at no cost to the Department of Energy. All NCC studies are publicly available on the NCC website.

The NCC is a totally self-sustaining organization; it receives no funds from the Federal government. The activities and operations of the NCC are funded solely from member contributions, the investment of Council reserves and generous sponsors.



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Co-Chairs:

Justin Burk, Commercial Director, Peabody

David Lawson, Vice President Coal, Norfolk Southern Corporation

Executive Summary

Coal is ubiquitous and can be found in nearly every corner of the globe. Recoverable amounts of coal are found and commercially mined in over 50 countries and consumed in more than 70 countries. While significant commercial amounts of coal are exported by many countries, just 10 countries, including the U.S., accounted for over 95% of exports in 2017.

Coal trade is a large and growing business as developing economies electrify and industrialize using the lowest cost fuels available to them. The global market for coal is widespread but currently driven by the large demand in Asia – most notably by China and India.

Global Coal Trade

Major Coal Exporters (Million Tonnes)				Major Coal Importers (Million Tonnes)			
	2015	2016	2017p		2015	2016	2017p
Indonesia	368.0	372.9	390.6	PR of China	204.1	255.6	271.1
Australia	392.3	389.3	378.9	India	212.1	193.6	208.3
Russian Federation	155.2	171.1	189.7	Japan	189.3	186.0	187.5
U.S.	67.1	54.7	88.0	Korea	134.0	134.5	148.2
Colombia	72.8	83.3	86.1	Chinese Taipei	64.8	65.6	67.6
South Africa	75.8	69.9	71.0	Germany	54.5	27.8	48.0
Mongolia	14.7	24.1	33.4	Netherlands	57.1	49.5	40.3
Canada	30.5	30.3	31.1	Turkey	34.0	36.2	38.3
Kazakhstan	31.2	26.0	27.1	Malaysia	25.5	27.2	31.5
Netherlands	36.6	34.6	24.4	Russian Federation	24.1	24.0	29.0
Other	60.8	70.7	50.0	Other	305.9	288.3	317.1
OECD Americas	98.4	85.9	119.9	OECD Americas	35.4	35.1	36.1
OECD Asia Oceania	393.7	390.5	380.1	OECD Asia Oceania	334.8	329.7	344.8
OECD Europe	54.9	50.7	36.4	OECD Europe	263.6	237.8	234.0
OECD Total	547.0	527.1	536.4	OECD Total	633.8	602.6	614.9
Africa + Middle East	81.5	80.0	83.5	Africa + Middle East	14.4	15.2	14.2
Other Asia Oceania	414.4	437.4	445.3	Other Asia Oceania	583.7	628.4	674.9
Other Europe + Eura	188.2	198.4	218.3	Other Europe + Eurasia	47.3	46.7	56.4
Other Americas	73.7	84.1	86.7	Other Americas	26.2	25.3	26.6
Non- OECD Total	757.8	799.9	833.8	Non- OECD Total	671.6	715.6	772.1
World	1,304.8	1,327.0	1,370.2	World	1,305.4	1,318.2	1,387.0

Source: IEA, 2018 Coal Information Overview

Key suppliers to the global coal trade have been Australia, Indonesia, Russia, Colombia, South Africa and the U.S. While the U.S. is a major exporter of metallurgical coal, it is generally considered a “swing” supplier with respect to thermal coal. The level of U.S. participation in the global coal trade is a function of its competitiveness with other global suppliers, periodic shortages in the market, fluctuations in demand and macroeconomic factors such as currency exchange rates. There is reason to believe that market demand and plateauing supplies from other sources hold promise for continued growth of U.S. coal exports.

Value of Coal Exports

The U.S. exceeds all other nations in proven coal reserves. Our nation’s abundant, affordable and diverse domestic energy resources underpin our economic prosperity, providing both domestic and export opportunities. Low-cost electricity in the U.S., driven in large part by coal generation, has fueled our commercial and manufacturing sectors, providing us with a competitive advantage in global markets. Our energy abundance has also provided the U.S. with the opportunity to export energy resources, supporting trading partners and emerging nations in efforts to modernize their economies and combat energy poverty, while fostering U.S. economic growth.

Global Coal Reserves

Country	Million Tonnes	Share
U.S	258,709	25.0%
Russia	160,364	15.5%
Australia	144,918	14.0%
China	139,919	13.5%
India	97,728	9.4%
Germany	36,100	3.5%
Ukraine	34,375	3.3%
Poland	25,811	2.5%
Kazakhstan	25,605	2.5%
Indonesia	22,598	2.2%
Other	88,885	8.6%
Total	1,035,012	100.0%

Source: BP Statistical Review of World Energy, June 2017

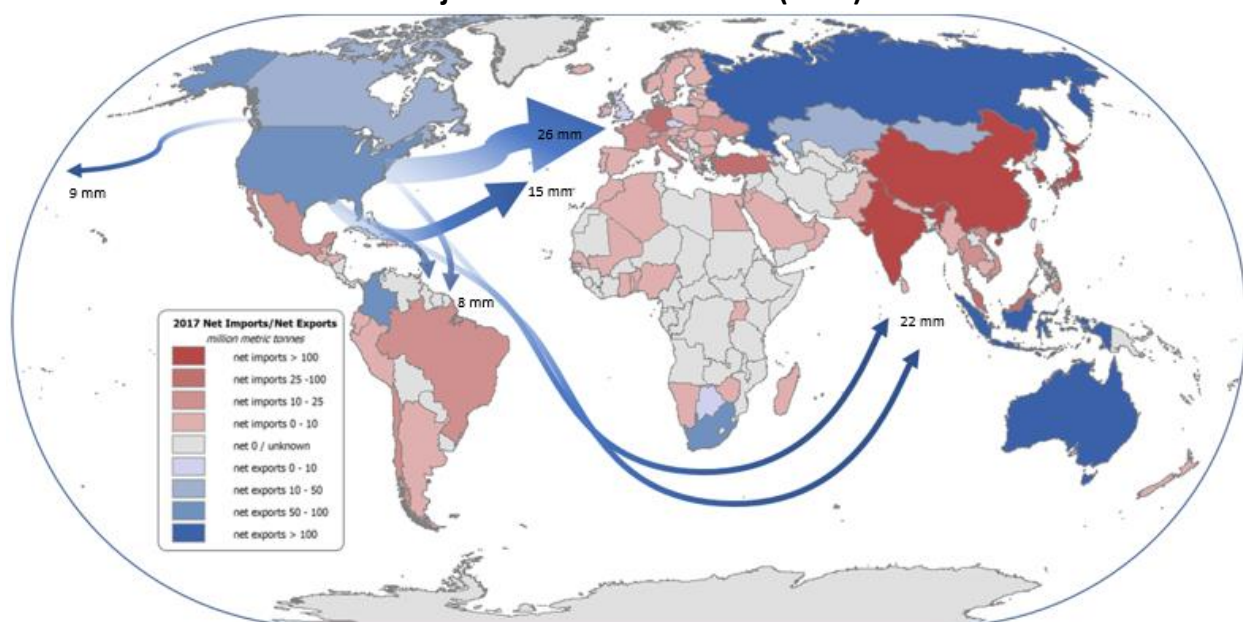
Coal exports are an increasingly important market sector for U.S. coal producers. In 2017, coal exports accounted for 12.5% of total U.S. production – the highest level since the early 1980s. These exports contributed \$13 billion to the U.S. Gross Domestic Product (GDP) and created, directly and indirectly, 100,000 jobs in the U.S.

Coal Export Landscape

Coal exports are driven by international thermal and metallurgical coal supply and demand. Thermal coal, also known as steam coal, is used in generating steam to create electricity as well as to provide energy for industrial processes such as cement production. Metallurgical coal, often referred to as coking coal, is used in steel making. In 2017, U.S. coal exports increased 61% year-over-year to 97 million tons, which was the highest export total since 2014. Non-western ports shipped 87 million tons of coal (89% of total U.S. exports).

Europe and Asia account for the vast majority of all U.S. coal exports. The U.S. has historically been a key coal supplier to Europe due to the proximity of U.S. East Coast and Gulf Coast terminals to Europe, longstanding business relationships between the U.S. and Europe, and desirable coal qualities that are readily consumed in Europe. Asia's growing demand for coal represents a significant growth opportunity for U.S. coal exports.

Major U.S. Coal Trade Flows (2017)

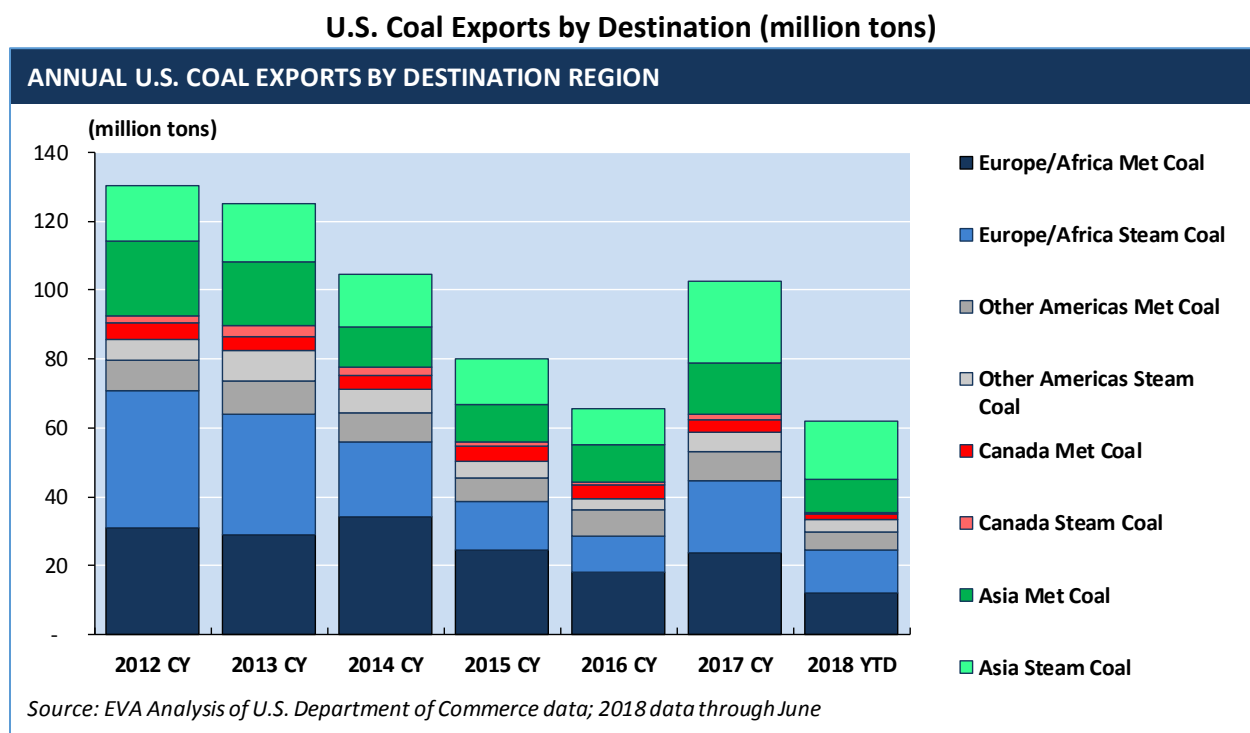


Source: United Nations, U.S. Census Bureau

Major direct competitors to U.S. metallurgical coal exporters are Australia, Russia and Canada. These countries compete with the U.S. for the metallurgical coal trade market, calculated to be between approximately 300 and 325 million tonnes in 2017. Over time, Mozambique may develop as a major source. The supply into the export market is fungible and can shift between sources.

The major competitors for U.S. thermal coal exporters are market-dependent. In Europe, the primary U.S. competitors are Russia and Colombia. Australia is a major competitor in the Asian market. South Africa, because of its location, is a swing supplier between the European and Asian markets. The U.S. would be a major competitor to Indonesia if additional exports of Powder River Basin coal to Asia were realized given that many customers desire supply diversity, heightening the U.S.'s position as a stable export supplier.

U.S. coal exports have been very volatile over the years, ranging from a peak in 2012 of 125 million tons to a low of 39 million tons in 2002. This volatility is attributable to many factors, including fluctuations in market demand, competition from global suppliers and various importing nation constraints, such as coal-import limiting policies and infrastructure. While many of these variables are outside the control of the U.S. government and industry, there are numerous factors which can be addressed by policymakers and commercial interests to enhance U.S. coal exports.

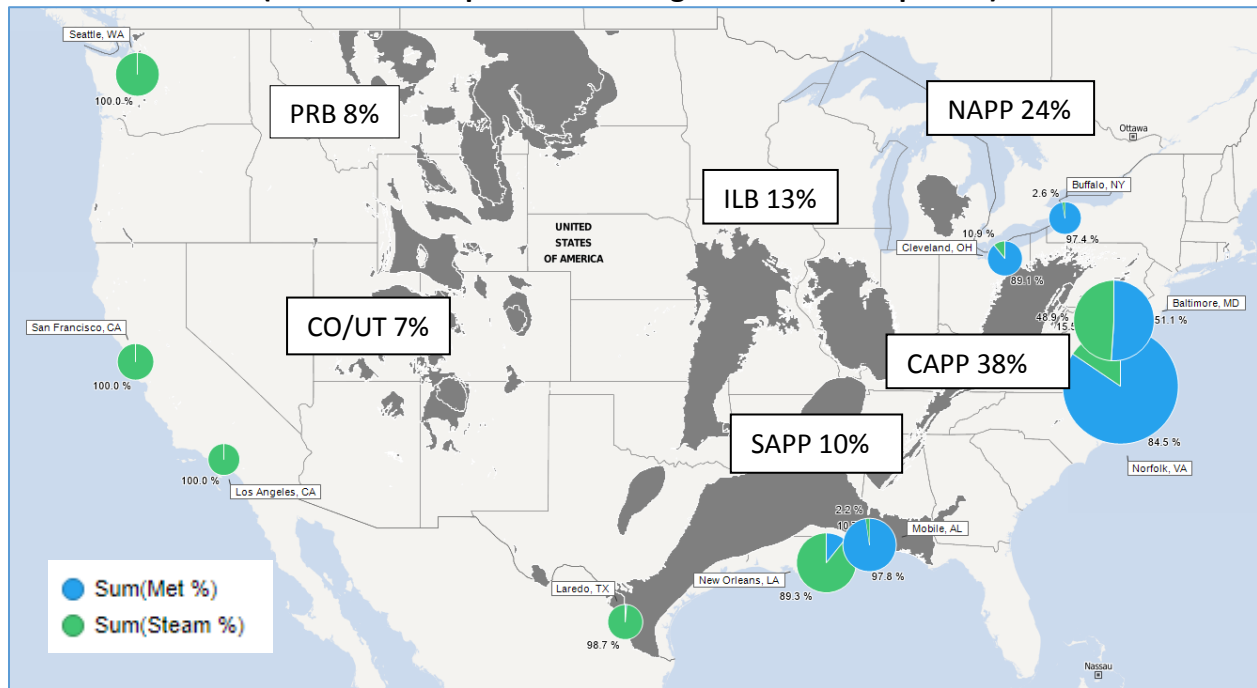


Source: EVA Monthly Coal Trade Report, June 2018

Supply Considerations

There are ample reserves of U.S. coal to allow for an increase in exports. Regional supply/demand considerations may limit what is immediately available to export versus what can be developed for long-term export markets. The barriers to the development of U.S. coal reserves for the export market are generally regional in nature. The most significant are related to federal mineral ownership, mining regulations, support for traditional coal supply regions and the development of non-traditional coal supplies.

2017 U.S. Coal Exports Departing from the 10 Largest Outlets (Bubble Size Represents Tonnage & % of Coal Exported)



Source: U.S. Energy Information Administration, Quarterly Coal Report (Oct.-Dec. 2017)
Seattle, WA and Laredo, TX outlets are port and rail transfer points.

Coal washing and upgrading technologies are designed to reduce the amount of mineral matter and/or moisture in coal, which can be particularly important for coal slated for export. Transporting coal with a higher heat content could reduce transportation costs on a quality adjusted evaluated basis – improving the value proposition for some U.S. coal compared to the international market.

Some international markets for U.S. coals are restricted or could become restricted due to coal quality constraints or lack of environmental technologies/controls at end-user facilities. It would be beneficial to continue U.S. efforts to research, develop and deploy advanced coal technologies that could be retrofit to existing plants and/or adopted in new plant construction that would enable other nations to make use of a wider range of U.S. coals.

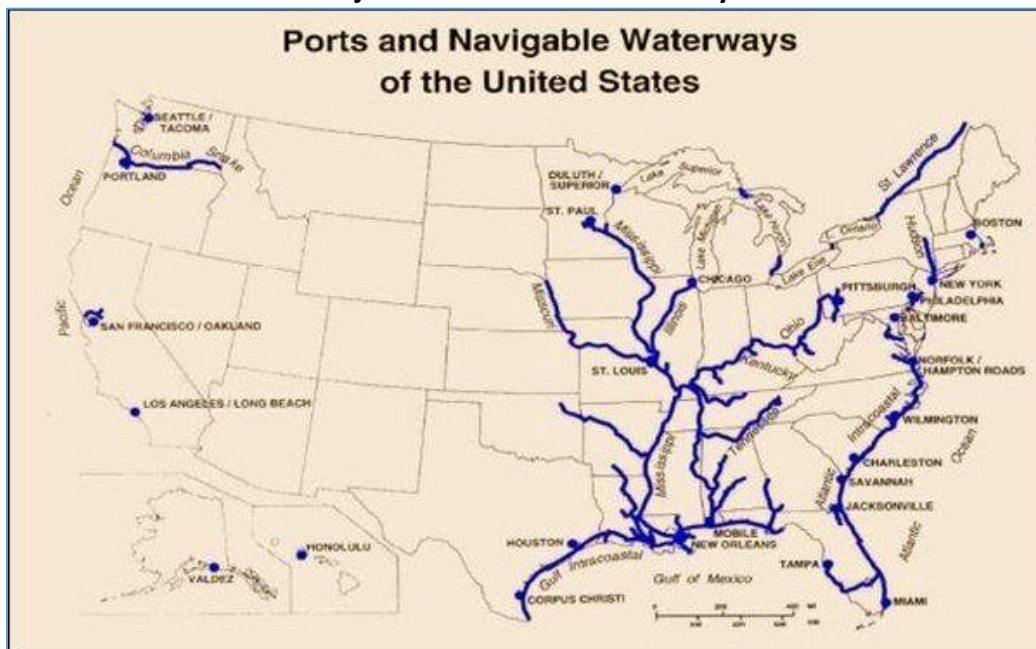
Transportation & Shipping Considerations

While generally robust, the nation's coal transportation and shipping network would benefit from various infrastructure improvements.

On the East Coast, channel deepening would improve navigational efficiencies, allow safe passage of vessels in and out of the harbor, and improve accommodation of the existing fleet. Dredging and maintaining key shipping channels to accommodate larger, more cost-effective vessels and maximize navigational efficiencies would help to enhance the competitiveness of U.S. coal exports.

On the Gulf Coast, the inland waterways system of locks and dams requires constant maintenance. The lack of regular dredging has significantly restricted movements on the inland waterways, especially during periods of low water.

Major U.S. Ports and Waterways



Source: Armor Freight Services

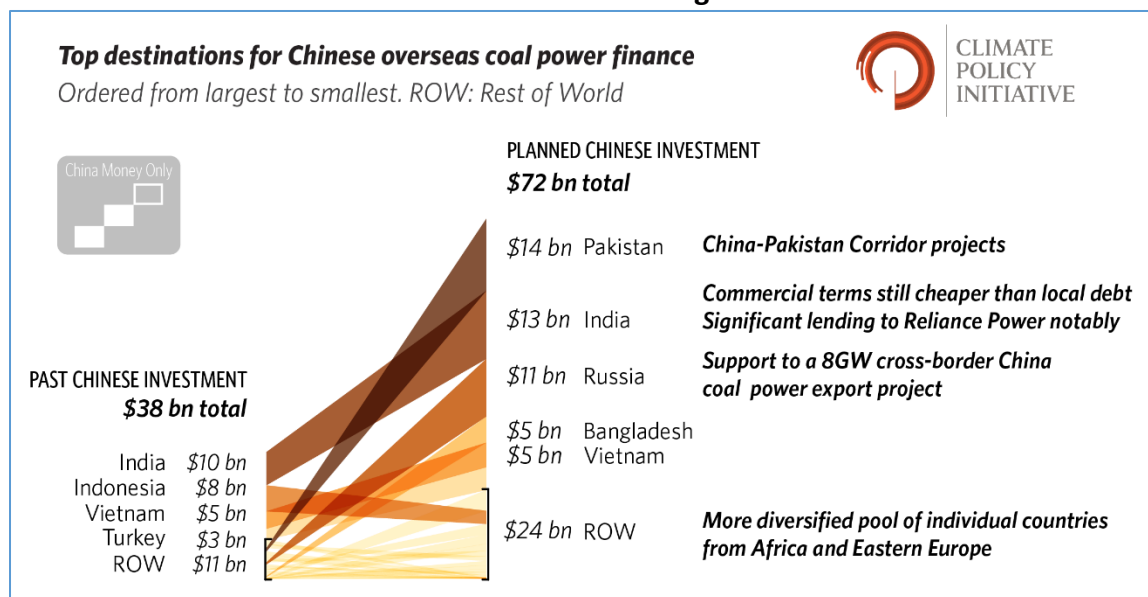
On the West Coast, the limited capacity of export terminals has greatly limited the ability to export western U.S. coals. The environmental review and permitting process to approve the development of coal export facilities is unnecessarily slow and cumbersome. Because objections to export facilities are often driven by fundamental and philosophical opposition to the production and use of coal, as well as the divergent approaches between the Federal government and state/local entities, policy reforms recommended within this report may not be sufficient to reduce uncertainties in a manner that enables projects to move forward. Further study is warranted into the long-term potential to reduce export constraints through the development of export terminals on Federal properties that would benefit from a streamlined and simplified review and permitting process.

Institutional and Regulatory Considerations

With more than 900 gigawatts (GW) of coal capacity placed into service worldwide since 2000, and over 600 GW planned or under construction, the potential for U.S. thermal coal exports to supply steadily growing international demand is significant. However, the inability for the U.S. and Multilateral Development Banks (MDB) to support these projects may prevent this potential from being realized.

In response to the void created by U.S. and MDB funding prohibitions, China, Japan, Korea and other countries have stepped in to provide financial support for – and outsized influence over – continued coal development. These circumstances not only place the U.S. at a disadvantage by limiting the potential for U.S. coals and plant technologies to supply international markets, in many cases they result in inferior environmental controls.

Chinese Overseas Coal Power Financing Destinations



Source: Climate Policy Initiative, Herve-Mignucci & Wang, 2015

<https://climatepolicyinitiative.org/publication/slowing-the-growth-of-coal-power-outside-china-the-role-of-chinese-finance/>

A number of domestic entities also have a potential role in supporting continued development of coal power plants overseas. The Export-Import Bank of the United States (EXIM Bank) is the official export credit agency of the U.S. government. In 2013, the EXIM Bank adopted guidelines prohibiting support for projects associated with coal mining or electricity generation except in rare circumstances. The Bank followed this policy by leading a coalition of international export credit agencies to sign an agreement under the OECD committing to the same prohibitions.

The Overseas Private Investment Corporation (OPIC) is charged with mobilizing private capital to help foster economic development in emerging economies, and in doing so, advance U.S. foreign policy objectives. While OPIC's mission and focus makes it well-suited for supporting foreign policy objectives by enhancing opportunities for U.S. coal exports, in 2009, a legal settlement with non-governmental organizations committed OPIC to a cap on greenhouse gas emissions from its portfolio of investments that was then codified by Congress in appropriations legislation later that year. As a practical matter, these restrictions have effectively barred OPIC from supporting coal-related projects.

Trade Barriers

Increasing coal exports has the potential to improve the U.S. balance of trade while also providing a boost to coal producers facing uncertainty in domestic markets. Escalating trade tensions are a serious concern that could result in significantly restricted markets for U.S. coal. In addition to China, a number of other countries have initiated retaliation measures to U.S.-imposed tariffs on steel and aluminum imports, and at least one – Turkey – has included coal among the list of targeted U.S. products. Beyond specific barriers such as tariffs, the general ongoing friction on trade issues threatens to reduce the willingness of U.S. trade partners to enter into agreements to buy U.S. energy resources.

Meanwhile, a number of key markets have long imposed unfair tariffs on U.S. coal imports. These artificial costs exacerbate the geographical disadvantage of U.S. coal exports to Asia and impact the competitiveness of deliveries to the region. U.S. government efforts to reduce or eliminate these tariffs would facilitate increased coal export opportunities.

Ultimately, while the potential for current tensions to negatively impact U.S. coal is high, heightened attention to global trade issues also presents an opportunity for U.S. negotiators to expand market access for U.S. coal. Efforts by the DOE, U.S. trade negotiators and diplomatic officials to actively encourage such purchases and undertake dedicated steps to identify and pursue bilateral and multilateral opportunities throughout the world would also facilitate opportunities for expanded U.S. coal exports.

National Coal Council Recommendations

The competitiveness and growth of U.S. coal exports depends primarily on the ability of U.S. producers to mine and ship coal to end-use markets at an overall evaluated delivered cost that is economically competitive vis-à-vis other global coal suppliers and vis-à-vis other energy sources. Numerous opportunities exist to enhance the competitiveness of U.S. coal exports at every link in the coal supply chain and by addressing various trade and regulatory barriers.

NCC's primary strategic recommendations:

- **Coal Production.** Deploy advanced coal mining and processing technologies to reduce production costs, thus making U.S. coals more competitive in international markets. Enhance U.S. coal mining operations with the greatest export potential in both traditional and non-traditional coal supply regions.
- **River Transport.** Streamline the funding to the nation's inland waterways system of locks and dam infrastructure to facilitate the cost-efficient flow of U.S. coals to international markets via U.S. East and Gulf Coast ports.
- **Ports & Terminals.** Enhance coal export port and terminal capacity on the U.S. Atlantic, Gulf and West coasts.
- **Trade and International Relations.** Eliminate policy and technology barriers to the deployment of advanced coal facilities in international markets. Additionally, capitalize on trade opportunities, assessing policies and approaches that inhibit or promote U.S. trade and U.S. coal exports.

- **Economic Development in International Markets.** Support efforts to advance economic growth in international markets and the global development of advanced coal technologies, as well as the elimination of regulatory and institutional barriers to the deployment of coal-based facilities worldwide.

NCC recommends the following tactics be employed to achieve these strategic objectives.

Coal Production

Strategic Objective 1: Deploy advanced coal mining and processing technologies to reduce production costs, thus making U.S. coals more competitive in international markets.

Recommended Tactics:

- Support research and development (R&D) initiatives to develop more efficient mining technologies to reduce the cost of extracting coal. Initiatives for new production-enhancing technologies in coal mining should include automation, robotics, big data/advanced computing, machine learning/artificial intelligence, and remote mining technologies.
- Support R&D to develop advanced coal preparation and upgrading technologies – such as coal fines/waste coal recovery and coal drying/coal beneficiation – to increase coal heat content, remove impurities and lower costs.

Strategic Objective 2: Enhance U.S. coal mining operations with export potential in both traditional and non-traditional coal supply regions.

Recommended Tactics:

- States may benefit from offering a range of support mechanisms to induce continued mining activity. One such initiative was undertaken by the State of Virginia whose legislature passed tax credits for metallurgical coal production from thin-seamed underground mines and surface mines. Tax credits that reduce severance or other forms of public payments associated with investment in new mining capacity might also prove effective and could well be revenue positive when applied appropriately.
- Identify and support infrastructure projects in non-traditional coal supply regions, including Oklahoma, Arkansas and Alaska.
- Eliminate barriers to production of coal on Federal lands associated with bonus payments, rents and uncertain royalty payments.
- Assess any future mining regulations, such as the Stream Protection Rule repealed by the Trump Administration, to determine their impacts on U.S. coal exports.

River Transport

Strategic Objective: Streamline the funding to the nation’s inland waterway system locks and dam infrastructure to facilitate the cost-efficient flow of U.S. coals to international markets via East and Gulf Coast ports.

Recommended Tactics:

- Support regular maintenance and dredging of inland waterway river channels to ensure non-restricted movements of coal barge traffic especially during period of low water.
- Deploy funds from the current excess balance of fees collected from the Harbor Maintenance Tax and support efficient funding levels from the Inland Waterways Trust Fund to maintain and modernize inland waterway locks and dams, specifically those on the Ohio River as is being done with the Olmstead Locks and Dam projects.

Ports & Terminals

Strategic Objective: Enhance coal export port and terminal capacity on the U.S. Atlantic, Gulf and Pacific coasts.

Recommended Tactics:

- Dredge key export ports and ship channels to accommodate larger vessels – such as Capesize and Baby Capes – thereby lowering shipping costs and enhancing the delivered economics of U.S. eastern and interior basin coals in international markets.
- Facilitate improved planning and cooperation between state and Federal authorities responsible for environmental review and permitting of proposed projects, limit state misuse of such processes aimed at challenging exports of U.S. produced goods.
- Undertake further study to assess the potential to reduce export constraints through development of export terminals on Federal properties.
- Identify and analyze bottlenecks and infrastructure upgrades at existing export terminals and assess opportunities to address logistical constraints to enable optimal utilization of the U.S. coal export transportation system (rail, waterway, port).
- Advance comprehensive reforms to NEPA and related permitting processes, including relevant proposals described in Parts 3 and 4 of the *Infrastructure Permitting Improvement* portion of the White House’s February 2018 *Legislative Outline for Rebuilding Infrastructure in America*.
- Clarify the application of GHG considerations in NEPA reviews associated with development of U.S. coal export facilities. Engage CEQ to develop updated regulations or guidance clarifying how agencies should address GHGs in NEPA scoping processes.

Trade & International Relations

Strategic Objective 1. Eliminate policy and technology barriers to the deployment of advanced coal facilities in international markets.

Recommended Tactics:

- Reform Export-Import (EXIM) Bank of the U.S. policies and guidelines to allow support for projects associated with coal mining or high efficiency, low emissions (HELE) coal generation. Finalize appointments to the EXIM Bank board to facilitate reforms.
- Revise Overseas Private Investment Corporation (OPIC) and U.S. Agency for International Development (USAID) policies to allow for support for coal generation projects using HELE technology.
- Reassess U.S. policy prohibiting public financial support for construction of coal power plants overseas instituted under the Obama Administration and implemented through the U.S. Treasury Department (Multilateral Development Banks). These policies put the U.S. at a disadvantage as other nations step in to fill the financing void and secure lucrative contracts for fuel supplies, technology, equipment and operations. Restore U.S. and MDB support for construction of HELE coal power plants in international markets.
- Promote installation of state-of-the-art, commercially available emissions controls on international coal-based facilities to expand opportunities for more varied qualities of U.S. coal to be exported.
- Work with key end-use nations to make the technical and economic case that new power plants should be designed for a wide range of coal qualities.

Strategic Objective 2. Capitalize on trade expansion opportunities, assessing policies and approaches that inhibit or promote U.S. trade and U.S. coal exports.

Recommended Tactics:

- Pursue opportunities to expand market access for U.S. coal through the reduction or elimination of trade barriers, while avoiding escalation of barriers that could conversely result in reduced access to markets.
- Support U.S. Trade and Development Agency (USTDA) initiatives to advance exports of coal and advanced coal technologies through development of cleaner coal infrastructure projects overseas.
- Proactively engage with the African Development Bank and leaders of African nations to expand electricity access in pursuit of partnership opportunities. Work with Power Africa to reform policies and allow coal-related projects to compete for financing in support of economic growth and development throughout Africa.
- Pursue bilateral relationships that advance efforts to ensure energy security and universal access to affordable and reliable energy in order to eradicate poverty. Model these partnerships on the Japan-United States Strategic Energy Partnership (JUSSEP).
- Facilitate relationships between U.S. coal exporters and overseas markets similar to the recent Ukraine coal export agreement.

Economic Development in International Markets

Strategic Objective: Support efforts to advance economic growth in international markets and the global development of advanced coal technologies, as well as the elimination of regulatory and institutional barriers to the deployment of coal-based facilities worldwide.

Recommended Tactics:

- Support initiatives such as the BUILD Act to create a new International Development Finance Corporation to assist developing nations' efforts to achieve broad-based economic growth and poverty reduction.
- Assess the negative environmental impacts associated with restrictive financing for deployment of high efficiency, advanced coal technology facilities in international markets.
- Assess opportunities for U.S. industry to export advanced coal technologies to international markets and the associated environmental and poverty-reduction benefits for emerging economies.
- Support efforts to establish a global fossil fuels alliance to promote energy access and security through responsible use of advanced fossil fuel technologies.

Finally, to facilitate execution of the recommendations in its report, NCC recommends establishing a DOE-led, government-wide Coal Exports Task Force (or Energy Exports Coordination Task Force) to monitor and coordinate policy developments relevant to advancing coal exports. Participants should include all agencies engaged in energy development and international relations, including the U.S. Departments of Energy, Interior, State and Treasury, as well as USTDA, OPIC and the EXIM Bank, among others.

Advantages and Challenges of U.S. Metallurgical Coal versus Competitive Supply by Country

METALLURGICAL COAL	vs. Australia	vs. Russia	vs. Canada	vs. Mozambique
Mine cost	U.S. mine costs are higher	U.S. mine costs are higher	Mine costs are broadly similar	U.S. mine costs are lower
Quality	U.S. has limited premium low- & mid-vol	Russia has very low sulfur coal	U.S. has limited premium low- & mid-vol	U.S. has lower sulfur and ash
	U.S. has abundant high fluidity, high-vol & low ash	Low sulfur/high energy Russian PCI preferred in Europe	U.S. has abundant high fluidity, high-vol & low ash	
	U.S. has some expansion & CSR issues	U.S. coking coal quality is superior	U.S. has some expansion & CSR issues	
Infrastructure and logistics	U.S. rail costs are higher	U.S. rail costs are lower	Rail costs are broadly similar	U.S. rail costs are lower
	Government relations with rail companies are better in the U.S.	Russia has winter rail disruptions		
		Port costs are higher in Russia		
Ocean freight (OF)	U.S. OF is higher to Asia	U.S. OF is higher to Asia	U.S. OF is higher to Asia	U.S. OF is higher to Europe and Asia
	U.S. OF is lower in the Atlantic	U.S. OF is lower in the Atlantic		
	U.S. can't always load large vessels, although metallurgical coal consumers and producers usually favor Panamax vessels; dredging ports could be an equalizer, but at a cost			
Security and regularity of supply	U.S. seldom has labor strikes	Russian winter can interrupt coal delivery	Broadly similar - both high reputable suppliers	U.S. political structure and infrastructure dependable
	U.S. hurricanes seldom interrupt shipments	Russia in transition to market economy	U.S. has greater fiscal and regulatory stability	U.S. has greater fiscal and regulatory stability
	U.S. has greater fiscal and regulatory stability	U.S. has greater fiscal and regulatory stability		
Shipment uniformity	Broadly similar	U.S. has better quality control of shipments	Broadly similar - U.S. and Canada both careful shippers that carefully manage contracts	U.S. has better quality control of shipments

Note: Green shading indicates a U.S. advantage, red shading a U.S. disadvantage and blue shading a similarity.

Advantages and Challenges of U.S. Thermal Coal versus Competitive Supply by Country

THERMAL COAL	vs. Australia	vs. Indonesia	vs. Russia	Colombia	South Africa
Mine cost	U.S. mine costs are higher	PRB mine costs are lower	U.S. mine costs are higher	U.S. mine costs are higher	U.S. mine costs are higher
Quality	U.S. sulfur levels are higher in the ILB and NAPP	Broadly similar characteristics (PRB)	Russia has very low sulfur coal	U.S. has higher energy content	U.S. has higher energy content
		U.S. has occasionally high sodium content (PRB)		Colombia has lower sulfur content, on average	
Infrastructure and logistics	U.S. rail costs are higher	Inland rail costs are higher in the U.S.	U.S. rail costs are lower	U.S. rail costs are higher	S Africa has rail capacity constraints
	Government relations with rail companies are better in the U.S.	Port costs are higher in the U.S.	Russia has winter rail disruptions		
			Port costs are higher in Russia		
Ocean freight (OF)	U.S. has higher OF costs to Asian markets	U.S. has higher OF costs to Asian markets	U.S. OF is higher to Asia	U.S. usually has higher OF costs	U.S. has higher OF costs
	U.S. has lower OF costs to Atlantic markets		U.S. OF is lower in the Atlantic		
	U.S. can't always load large vessels, although metallurgical coal consumers and producers usually favor Panamax vessels; dredging ports could be an equalizer, but at a cost				
Security and regularity of supply	U.S. seldom has labor strikes	Indonesia has fiscal instability	Russian winter can interrupt coal delivery	The U.S. has greater fiscal and regulatory stability	The U.S. has greater fiscal and regulatory stability; there is a threat of domestic market obligation in South Africa
	U.S. hurricanes seldom interrupt shipments	Indonesia has domestic market obligation	Russia in transition to market economy		
	U.S. has greater fiscal and regulatory stability	Indonesia has checkered delivery history	U.S. has greater fiscal and regulatory stability		
Shipment uniformity	Broadly similar characteristics	U.S. has better quality control of shipments	U.S. has better quality control of shipments	Broadly similar - U.S. and Colombia both careful shippers that carefully manage contracts	Broadly similar - U.S. and South Africa both careful shippers that carefully manage contracts

Note: Green shading indicates a U.S. advantage, red shading a U.S. disadvantage and blue shading a similarity.