UNITED STATES STEEL CORP
Form 10-K
February 15, 2019
2018
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934
For the Fiscal Year Ended December 31, 2018
Commission file number 1-16811
(Exact name of registrant as specified in its charter)

Delaware	25-1897152
(State of Incorporation)	(I.R.S. Employer Identification No.)

600 Grant Street, Pittsburgh, PA 15219-2800
(Address of principal executive offices)
Tel. No. (412) 433-1121
Securities registered pursuant to Section 12 (b) of the Act:

Title of Each Class	Name of Exchange on which Registered
United States Steel Corporation Common Stock, par value $1.00	New York Stock Exchange, Chicago Stock Exchange

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes þ No
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.
Yes No þ
Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for at least the past 90 days. Yes þ No
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes þ No
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. þ
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or emerging growth company. See the definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.(Check one):

Large accelerated filer P	Accelerated filer	Non-accelerated filer	Smaller reporting company	Emerging growth company __

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ___
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No þ

Aggregate market value of Common Stock held by non-affiliates as of June 29, 2018 (the last business day of the registrant's most recently completed second fiscal quarter): $6.1 billion. The amount shown is based on the closing price of the registrant's Common Stock on the New York Stock Exchange composite tape on that date. Shares of Common Stock held by executive officers and directors of the registrant are not included in the computation. However, the registrant has made no determination that such individuals are "affiliates" within the meaning of Rule 405 under the Securities Act of 1933.

There were 173,222,678 shares of United States Steel Corporation Common Stock outstanding as of February 12, 2019.

Documents Incorporated By Reference:

Portions of the Proxy Statement for the 2019 Annual Meeting of Stockholders are incorporated into Part III.

INDEX

	FORWARD-LOOKING STATEMENTS	3
	10-K SUMMARY	5
PART I		
Item 1.	BUSINESS	19
Item 1A	RISK FACTORS	43
Item 1B	UNRESOLVED STAFF COMMENTS	49
Item 2.	PROPERTIES	50
Item 3.	LEGAL PROCEEDINGS	52
Item 4.	MINE SAFETY DISCLOSURE	58
PART II		
Item 5.	MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES	61
Item 6.	SELECTED FINANCIAL DATA	63
Item 7.	MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	64
Item 7A	QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK	93
Item 8.	FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA	F-1
Item 9.	CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE	95
Item 9A	CONTROLS AND PROCEDURES	95
Item 9B	OTHER INFORMATION	95
PART III		
Item 10.	DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE	96
Item 11.	EXECUTIVE COMPENSATION	96
Item 12.	SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS	97
Item 13.	CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE	97
Item 14.	PRINCIPAL ACCOUNTANT FEES AND SERVICES	97
PART IV		
Item 15.	EXHIBITS AND FINANCIAL STATEMENT SCHEDULE	98
Item 16.	10-K SUMMARY	107
SIGNATURES		108
GLOSSARY OF CERTAIN DEFINED TERMS		109
TOTAL NUMBER OF PAGES		111

Table of Contents

FORWARD-LOOKING STATEMENTS

This report contains information that may constitute “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. We intend the forward-looking statements to be covered by the safe harbor provisions for forward-looking statements in those sections. Generally, we have identified such forward-looking statements by using the words “believe,” “expect,” “intend,” “estimate,” “anticipate,” “project,” “target,” “for “aim,” "should," “will” and similar expressions or by using future dates in connection with any discussion of, among other things, operating performance, trends, events or developments that we expect or anticipate will occur in the future, statements relating to volume growth, share of sales and earnings per share growth, and statements expressing general views about future operating results. However, the absence of these words or similar expressions does not mean that a statement is not forward-looking. Forward-looking statements are not historical facts, but instead represent only the Company’s beliefs regarding future events, many of which, by their nature, are inherently uncertain and outside of the Company’s control. It is possible that the Company’s actual results and financial condition may differ, possibly materially, from the anticipated results and financial condition indicated in these forward-looking statements. Management believes that these forward-looking statements are reasonable as of the time made. However, caution should be taken not to place undue reliance on any such forward-looking statements because such statements speak only as of the date when made. Our Company undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. In addition, forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from our Company's historical experience and our present expectations or projections. These risks and uncertainties include, but are not limited to the risks and uncertainties described in this report in “Item 1A. Risk Factors” and those described from time to time in our future reports filed with the Securities and Exchange Commission.

References in this Annual Report on Form 10-K to "U. S. Steel," "the Company," "we," "us," and "our" refer to United States Steel Corporation and its consolidated subsidiaries unless otherwise indicated by the context.

Non-Generally Accepted Accounting Principles (non-GAAP) Financial Measures

This report contains certain non-GAAP financial measures such as earnings (loss) before interest, income taxes, depreciation, depletion and amortization (EBITDA), adjusted EBITDA, adjusted net earnings (loss), adjusted net earnings (loss) per diluted share and cash conversion cycle.

We believe that EBITDA, considered along with the net earnings (loss), is a relevant indicator of trends relating to cash generating activity and provides management and investors with additional information for comparison of our operating results to the operating results of other companies.

Adjusted net earnings (loss) and adjusted net earnings (loss) per diluted share are non-GAAP measures that exclude the effects of the United Steelworkers (USW) labor agreement signing bonus and related costs, the gain associated with our retained interest in U. S. Steel Canada Inc., gains (losses) on the sale of ownership interests in equity investees, restructuring charges, impairment charges, significant temporary idling charges, restart and related costs associated with Granite City Works, debt extinguishment and other related costs, the reversal of our tax valuation allowance and effects of tax reform that are not part of the Company's core operations. Adjusted EBITDA is also a non-GAAP measure that excludes the effects of the USW labor agreement signing bonus and related costs, the gain associated with our retained interest in U. S. Steel Canada Inc., gains (losses) on the sale of ownership interests in equity investees, restructuring charges, impairment charges and significant temporary idling charges and restart and related costs associated with Granite City Works. We present adjusted net earnings (loss), adjusted net earnings (loss) per diluted share and adjusted EBITDA to enhance the understanding of our ongoing operating performance and

established trends affecting our core operations, by excluding the effects of events that can obscure underlying trends. U. S. Steel's management considers adjusted net earnings (loss), adjusted net earnings (loss) per diluted share and adjusted EBITDA as alternative measures of operating performance and not alternative measures of the Company's liquidity. U. S. Steel’s management considers adjusted net earnings (loss), adjusted net earnings (loss) per diluted share and adjusted EBITDA useful to investors by facilitating a comparison of our operating performance to the operating performance of our competitors. Additionally, the presentation of adjusted net earnings (loss), adjusted net earnings (loss) per diluted share and adjusted EBITDA provides insight into management’s view and assessment of the Company’s ongoing operating performance, because management does not consider the adjusting items when evaluating the Company’s financial performance or in preparing the Company’s quarterly or annual financial Guidance. Adjusted net earnings (loss), adjusted net earnings (loss) per diluted share and adjusted EBITDA should not be

considered a substitute for net earnings (loss), earnings (loss) per diluted share or other financial measures as computed in accordance with U.S. GAAP and is not necessarily comparable to similarly titled measures used by other companies.

We believe the cash conversion cycle is a useful measure in providing investors with information regarding our cash management performance and is a widely accepted measure of working capital management efficiency. The cash conversion cycle should not be considered in isolation or as an alternative to other GAAP metrics as an indicator of performance.

Table of Contents

10-K SUMMARY

This section provides an overview of U. S. Steel's business, strategy and financial performance for 2018. It does not contain all of the information that may be important to a reader. Please read the entire annual report on Form 10-K.

Our vision is for U. S. Steel to be the industry leader in delivering high-quality, value added products and innovative solutions that address our customers' most challenging steel needs for the future. Underlying our efforts is our belief that we must operate as a principled company committed to a code of conduct that is rooted in our Gary Principles and our core values. Our core values are articulated in our S.T.E.E.L. principles set forth in our recently updated Code of Ethical Business Conduct - Safety First, Trust and Respect, Environmentally Friendly Activities, Ethical Behavior, and Lawful Business Conduct. These core beliefs have served us well for much of our history, and our commitment to them remains as strong as the products we make every day.

Our vision is about more than U. S. Steel; it is about reinforcing the economic and societal benefits associated with strong domestic manufacturing capabilities, of which steel is a foundational industry. During 2018, we continued to transform U. S. Steel through a disciplined approach committed to finding ways to innovate, grow, and overcome obstacles in order to create value and benefit the long-term interests of all U. S. Steel stakeholders, including stockholders, employees, customers and the communities where we do business. This work also included the development of a refreshed corporate strategy designed to build on our strengths and maximize the advantages we have over our competition. Our strategy builds on our proven processes and tools for our intense daily operational focus on safety, quality, delivery and cost. This refreshed strategy was approved by our Board of Directors in July 2018 and incorporates three critical success factors: winning in the most attractive markets, moving down the cost curve and moving up the talent curve, each of which is further described below.

First, we will focus on the most attractive steel markets by investing in our customers, with an emphasis on creating differentiated, innovative and value-added solutions that will help them succeed.

Second, we aim to move down the cost curve. Our efforts to improve our financial performance and our strong balance sheet enable us to reduce our costs so that we can achieve operational improvements from advanced technologies. We are also investing in our facilities to increase productivity and improve our capabilities, including through the ongoing multi-year asset revitalization effort in our North American Flat-Rolled (Flat-Rolled) segment, as well as reliability-centered maintenance activities. We are implementing reliability-centered maintenance focusing on thirteen priority assets and a few others within our Flat-Rolled segment.

Third, we want to move up the talent curve by investing in our employees by providing the training and resources they need to succeed. This will help us reinforce a culture where accountability, fairness and respect are foundational, and high performance and diversity in all its forms are valued and celebrated.

We believe effectively executing our strategy will secure our position as an industry leader by reducing our vulnerabilities during down cycles, accentuating our advantages in up cycles, and enabling the creation of value - and the related rewards - for all U. S. Steel stakeholders through business cycles.

Table of Contents

KEY PERFORMANCE INDICATORS

This section provides an overview of select key performance indicators for U. S. Steel which management and investors use to assess the Company's financial performance. It does not contain all of the information you should consider. Fluctuations for year to year changes are explained in Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations."

- Our continued investments in upgrading and improving our assets helped to provide a more stable operating performance in 2018.
- Our 2018 net earnings include a favorable impact of $374 million due to the reversal of a portion of our deferred tax asset valuation allowance.
- Our 2017 and 2018 results include a favorable impact of $344 million and $455 million, respectively, related to our previously disclosed change in accounting method for property, plant and equipment.
- Our 2017 net earnings include an $81 million income tax benefit from tax reform.

Table of Contents

- The increase in net sales in 2018 as compared to 2017 was primarily due to higher average realized prices in all of our reportable segments and increased shipments in our Flat-Rolled and Tubular segments due to improved market conditions. Improved market conditions for our Flat-Rolled segment reflect accelerated demand for steel products in line with the recent economic growth, as well as the supply-demand balance between imported and domestic steel. The restart of the two blast furnaces at our Granite City Works during 2018 enabled us to take advantage of the improved market dynamics.
- The increase in net sales in 2017 as compared to 2016 was primarily due to higher average realized prices in all of our reportable segments. Improved market conditions for our Flat-Rolled segment, notably for hot-rolled coil, resulted in spot price increases in 2017 as well as price increases for both market-based and firm priced contracts from 2016 to 2017. Lower imports resulted in higher average realized prices for our USSE segment in 2017. Improved market conditions for our Tubular segment resulted in higher average realized prices and higher shipments.

Table of Contents

- These amounts are derived starting from net earnings (loss) as shown on page 6. For a full reconciliation of adjusted EBITDA see page 18.
- EBITDA increased for all three reportable segments in 2018 as compared to 2017 with higher average realized prices in all three segments. Our continued focus on maintaining a strong balance sheet while investing in operational excellence, technology and innovation led to another successful year.
- EBITDA increased for all three reportable segments in 2017 as compared to 2016 with higher average realized prices in all three segments. Our long-term strategic goals of improving our balance sheet, enhancing operational efficiency and reliability and seeking robust enforcement of our trade laws led to a successful year.
- Our 2017 and 2018 adjusted EBITDA includes a favorable impact of $381 million and $504 million, respectively, related to our previously disclosed change in accounting method for property, plant and equipment.

- These amounts are derived starting from net earnings (loss) as shown on page 6. For a full reconciliation of adjusted net earnings (loss) see page 16.
- We have delivered another year of significant earnings improvement. We are encouraged by the effectiveness of the investments we are making in our assets and remain focused on improving our operating and commercial performance to drive long-term value creation for our stockholders.
- Our 2017 and 2018 results include a favorable impact of $344 million and $455 million, respectively, related to our previously disclosed change in accounting method for property, plant and equipment.

- See reconciliation from diluted net earnings (loss) per share to adjusted diluted net earnings (loss) per share on page 17.
- Our 2017 and 2018 results include a favorable impact of $1.95 and $2.55 per diluted share, respectively, related to our previously disclosed change in accounting method for property, plant and equipment.

Table of Contents

- In 2018 and 2017, improved financial performance more than offset the investment in working capital.
- Our cash conversion cycle was 43, 30 and 28 days for 2016, 2017 and 2018, respectively, illustrating our significant improvement in cash management. See “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations – Financial Condition, Cash Flows and Liquidity – Cash Flows” for the calculation of our cash conversion cycle.

Table of Contents

Flat-Rolled Segment Asset Revitalization Program Performance Scorecard

[1] Total Asset Revitalization program is $2.0 billion, comprised of $1.5 billion of capital and $0.5 billion of expense.
[2] The quality metric has been adjusted to exclude significant planned outages. Applying the same adjustment, the 2017 end of year quality metric performance improved 13% from the base period compared to the 9% improvement previously reported.

Our Asset Revitalization scorecard includes two financial (EBITDA and capital expenditures) and two non-financial (quality and reliability) metrics for tracking our progress on implementing our Flat-Rolled Segment asset revitalization program. Our progress in 2018 towards our 2020 goals is illustrated on the scorecard above. See the Business Strategy section for more information about the program and our progress so far.

Table of Contents

- Maintaining strong cash and liquidity continues to be a strategic priority. Our total liquidity in 2018 remained strong and supported our ability to satisfy short-term obligations, fund working capital requirements, and provided a foundation to execute key strategic initiatives such as our asset revitalization program. In 2018, capital spending was $1,001 million, which is nearly double our capital spending of $505 million in 2017.
- Total liquidity improved from 2016 to 2017 primarily due to higher Credit Facility Agreement availability and improved cash levels, which was driven by higher values of inventory and trade receivables that serve as collateral for the Credit Facility Agreement, as well as improved profitability levels.

Table of Contents

- The increase in 2018 pension and OPEB expense is mainly due to a lower return on assets assumption for pension benefits.
- The increase in 2017 pension and OPEB expense from 2016 is primarily due to a lower return on assets assumption for OPEB benefits as a result of actions taken in 2016 to de-risk the OPEB benefit plan.
- 2019 pension and OPEB expense is expected to be approximately $215 million.
- For further details, see Note 18 to the Consolidated Financial Statements.

- The funded status of our pension plan deteriorated in 2018 primarily due to lower than expected asset performance partially offset by an increase in the discount rate. The funded status of our OPEB plan improved in 2018 primarily due to the increase in the discount rate.
- On a U.S. GAAP basis the funded status of both our pension and OPEB obligations was 88%.
- For further details, see Note 18 to the Consolidated Financial Statements.

Table of Contents

NON-GAAP FINANCIAL MEASURES

As disclosed on page 3 of this report, we present EBITDA, adjusted EBITDA, adjusted net earnings (loss) and adjusted net earnings (loss) per diluted share, which are non-GAAP measures, as an additional measurement to enhance the understanding of our operating performance and facilitate a comparison with that of our competitors.

RECONCILIATION TO ADJUSTED NET EARNINGS (LOSS) [(a)]

	Year Ended December 31,		
(Dollars in millions)	2018	2017	2016
Reconciliation to adjusted net earnings (loss) attributable to United States Steel Corporation			
Net earnings (loss) attributable to United States Steel Corporation, as reported	$ 1,115	$ 387	$ (440)
USW labor agreement signing bonus and related costs	81	—	—
Granite City Works restart and related costs	80	—	—
Reversal of tax valuation allowance	(374)	—	—
Loss on shutdown of certain tubular assets [(b)]	—	35	126
Gain associated with retained interest in U. S. Steel Canada Inc.	—	(72)	—
Restructuring and other charges [(b)]	—	—	(2)
Granite City Works temporary idling charges	(8)	17	18
(Gain) loss on equity investee transactions	(38)	(2)	12
Impairment of intangible assets	—	—	14
Loss on extinguishment of debt and other related costs	101	57	22
Effect of tax reform	—	(81)	—
Total Adjustments	(158)	(46)	190

Adjusted net earnings (loss) attributable to United States Steel Corporation	$ 957	$ 341	$ (250)

[a] The adjustments included in this table have been tax effected at a 0% tax rate due to the recognition of a full valuation allowance on domestic deferred tax assets, which was established in the fourth quarter of 2015.
[b] Included in restructuring and other charges on the Consolidated Statement of Operations.

Table of Contents

RECONCILIATION TO ADJUSTED NET EARNINGS (LOSS) PER SHARE [(a)]

	Year Ended December 31,		
	2018	2017	2016
Reconciliation to adjusted diluted net earnings (loss) per share			
Diluted net earnings (loss) per share, as reported	$6.25	$2.19	$(2.81)
USW labor agreement signing bonus and related costs	0.45	—	—
Granite City Works restart and related costs	0.45	—	—
Reversal of tax valuation allowance	(2.11)	—	—
Loss on shutdown of certain tubular assets [(b)]	—	0.20	0.80
Gain associated with retained interest in U. S. Steel Canada Inc.	—	(0.41)	—
Restructuring and other charges [(b)]	—	—	(0.01)
Granite City Works temporary idling charges	(0.04)	0.10	0.11
(Gain) loss on equity investee transactions	(0.21)	(0.01)	0.08
Impairment of intangible assets	—	—	0.09
Loss on extinguishment of debt and other related costs	0.57	0.33	0.14
Effect of tax reform	—	(0.46)	—
Total adjustments	(0.89)	(0.25)	1.21
Adjusted diluted net earnings (loss) per share	$5.36	$1.94	$(1.60)

[(a)] The adjustments included in this table have been tax effected at a 0% tax rate due to the recognition of a full valuation allowance on domestic deferred tax assets, which was established in the fourth quarter of 2015.
[(b)]Included in restructuring and other charges and cost of sales in the Consolidated Statement of Operations.

Table of Contents

RECONCILIATION TO EBITDA AND ADJUSTED EBITDA

	Year Ended December 31,		
(Dollars in millions)	2018	2017	2016
Reconciliation to EBITDA and Adjusted EBITDA			
Net earnings (loss) attributable to U. S. Steel Corporation	$1,115	$387	$(440)
Income tax (benefit) provision	(303)	(86)	24
Net interest and other financial costs	312	368	215
Depreciation, depletion and amortization expense	521	501	507
EBITDA	1,645	1,170	306
USW labor agreement signing bonus and related costs	81	—	—
Granite City Works restart and related costs	80	—	—
Loss on shutdown of certain tubular assets [(a)]	—	35	126
Gain associated with retained interest in U. S. Steel Canada Inc.	—	(72)	—
Restructuring and other charges [(a)]	—	—	(2)
Granite City Works temporary idling charges	(8)	17	18
(Gain) loss on equity investee transactions	(38)	(2)	12
Impairment of intangible assets	—	—	14
Adjusted EBITDA	1,760	1,148	474

[(a)] Included in restructuring and other charges in the Consolidated Statement of Operations.

Table of Contents

PART I

Item 1. BUSINESS

United States Steel Corporation (U. S. Steel) is an integrated steel producer of flat-rolled and tubular products with major production operations in the United States and Europe. An integrated steel producer uses iron ore and coke as primary raw materials for steel production. U. S. Steel has annual raw steel production capability of 22.0 million net tons (17.0 million tons in the United States and 5.0 million tons in Europe). U. S. Steel supplies customers throughout the world primarily in the automotive, consumer, industrial and oil country tubular goods (OCTG) markets. According to World Steel Association's latest published statistics, in 2017 U. S. Steel was the third largest steel producer in the United States and the twenty-sixth largest steel producer in the world. U. S. Steel is also engaged in other business activities consisting primarily of railroad services and real estate operations. U. S. Steel is a Delaware corporation established in 1901.

Segments

U. S. Steel has three reportable operating segments: North American Flat-Rolled (Flat-Rolled), U. S. Steel Europe (USSE) and Tubular Products (Tubular). The results of our railroad and real estate businesses that do not constitute reportable segments are combined and disclosed in the Other Businesses category.

Flat-Rolled

The Flat-Rolled segment includes the operating results of U. S. Steel's integrated steel plants and equity investees in North America involved in the production of slabs, strip mill plates, sheets and tin mill products, as well as all iron ore and coke production facilities in the United States. These operations primarily serve North American customers in the service center, conversion, transportation (including automotive), construction, container, and appliance and electrical markets.

The Flat-Rolled segment is structured to specifically address customer needs through three "commercial entities." Our Flat-Rolled segment commercial entities are focused on customers in the: (1) automotive, (2) consumer and (3) industrial, service center and mining industries.

Automotive Solutions collaborates with customers to develop solutions such as the next generation of advanced high strength steel (AHSS) to address challenges facing the automotive industry, including increased fuel economy standards and enhanced safety requirements.

Consumer Solutions partners with customers in the appliance, packaging, container and construction markets. Consumer Solutions has a robust presence with our tin customers, who represent roughly one quarter of this market category. Additional product lines within the market category include the Company's COR-TEN AZP®, ACRYLUME®, GALVALUME® and Weathered Metals Series®.

Industrial, Service Center and Mining Solutions focuses on the Company's customers in the service center business, pipe and tube manufacturing markets, and agricultural and industrial equipment markets.

Flat-Rolled has aggregate annual raw steel production capability of 17.0 million tons produced at our Gary Works, Mon Valley Works, Great Lakes Works and Granite City Works facilities. Raw steel production was 11.9 million tons in 2018, 10.8 million tons in 2017 and 10.7 million tons in 2016. Raw steel production averaged 70 percent of capability in 2018, 64 percent of capability in 2017 and 63 percent of capability in 2016. During December 2015 the Granite City Works steelmaking operations were temporarily idled. The steelmaking operations and hot strip mill

were restarted during 2018 and 2017, respectively. If its production capability is excluded during the temporary idle period, Flat-Rolled production would have been 76 percent and 75 percent of capability in 2017 and 2016, respectively.

European Operations

The USSE segment includes the operating results of U. S. Steel Košice (USSK), U. S. Steel's integrated steel plant and coke production facilities in Slovakia, and its subsidiaries. USSE primarily serves customers in the Eastern European service center, conversion, transportation (including automotive), construction, container, appliance and electrical, and oil, gas and petrochemical markets. USSE produces and sells slabs, strip mill plate, sheet, tin mill products and spiral welded pipe, as well as heating radiators and refractory ceramic materials.

USSE has annual raw steel production capability of 5.0 million tons. USSE's raw steel production was 5.0 million tons in 2018, 5.1 million tons in 2017, and 5.0 million tons in 2016. USSE's raw steel production averaged 100 percent of capability in 2018, 102 percent of capability in 2017 and 99 percent of capability in 2016.

Tubular

The Tubular segment includes the operating results of U. S. Steel's tubular production facilities and an equity investee in the United States. These operations produce and sell seamless and electric resistance welded (ERW) steel casing and tubing (commonly known as OCTG), and standard and line pipe and mechanical tubing and primarily serve customers in the oil, gas and petrochemical markets. Tubular's annual production capability is 1.9 million tons, which includes the annual production capability of the No. 1 Electric-Weld Pipe mill at Lone Star Tubular Operations that U. S. Steel plans to restart (see "Item 1. Business - Facilities and Locations - Tubular" for further information).

U. S. Steel Tubular Products, Inc. (USSTP), a wholly owned subsidiary of U. S. Steel, is continuing to design and develop a range of premium and semi-premium connections to address the growing needs for technical solutions for our end users' well site production challenges. Through its wholly owned subsidiary, U. S. Steel Oilwell Services, LLC, USSTP also offers rig site services, which provides the technical expertise for proper installation of our tubular products and proprietary connections at the well site.

For further information, see "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 4 to the Consolidated Financial Statements.

Table of Contents

Steel Shipments by Market and Segment

The following table does not include shipments to end customers by joint ventures and other equity investees of U. S. Steel. Shipments of materials to these entities are included in the "Further Conversion – Joint Ventures" market classification. No single customer accounted for more than 10 percent of gross annual revenues.

(Thousands of Tons)	Flat-Rolled	USSE	Tubular	Total
Major Market – 2018				
Steel Service Centers	1,560	799	—	2,359
Further Conversion – Trade Customers	3,529	287	—	3,816
– Joint Ventures	1,650	—	—	1,650
Transportation (Including Automotive)	1,231	728	—	1,959
Construction and Construction Products	689	1,637	38	2,364
Containers	635	439	—	1,074
Appliances and Electrical Equipment	406	261	—	667
Oil, Gas and Petrochemicals	—	11	724	735
Exports from the United States	445	—	18	463
All Other	365	295	—	660
TOTAL	10,510	4,457	780	15,747
Major Market – 2017				
Steel Service Centers	1,587	761	—	2,348
Further Conversion – Trade Customers	2,951	284	—	3,235
– Joint Ventures	1,513	—	—	1,513
Transportation (Including Automotive)	1,453	708	—	2,161
Construction and Construction Products	665	1,831	41	2,537
Containers	597	438	—	1,035
Appliances and Electrical Equipment	406	247	—	653
Oil, Gas and Petrochemicals	—	10	631	641
Exports from the United States	452	—	16	468
All Other	263	306	—	569
TOTAL	9,887	4,585	688	15,160
Major Market – 2016				
Steel Service Centers	1,765	801	—	2,566
Further Conversion – Trade Customers	2,650	274	—	2,924
– Joint Ventures	1,423	—	—	1,423
Transportation (Including Automotive)	1,725	660	—	2,385
Construction and Construction Products	725	1,811	40	2,576
Containers	600	436	—	1,036
Appliances and Electrical Equipment	420	236	—	656
Oil, Gas and Petrochemicals	—	4	340	344
Exports from the United States	436	—	20	456
All Other	350	274	—	624
TOTAL	10,094	4,496	400	14,990

Table of Contents

Business Strategy

Our strategy is to create long-term stockholder value by remaining profitable through business cycles by focusing on three critical success factors: winning in attractive markets, moving down the cost curve and moving up the talent curve. Foundational to our efforts is our belief that we must operate as a principled company committed to our S.T.E.E.L. principles, outlined in our Code of Ethical Business Conduct. Our core value of safety - the safety of our employees, our environment, our communities and our facilities and equipment - has served us well for much of our history and our commitment to it remains as strong as the products we make every day.

We are focused on winning in attractive markets through a customer-focused business model. We have made significant progress and our goal remains to deliver high-quality, value-added products on time every time and to collaborate with customers to develop innovative solutions that address their most challenging needs. The strategic positioning of operations within the commercial entities enhances our ability to better hear the voice of the customer, ensuring that we deliver superior value and drive results in the markets we choose to serve.

To position the Company to increase profitability and win in attractive markets, we continue to enhance our cost structure and move down the cost curve. The next phase of our operations transformation will be defined by our continued implementation of disciplined and standardized business and operations practices, continued investments in asset revitalization and reliability-centered maintenance and a renewed focus on innovation and technology.

Core to our strategy is moving up the talent curve. The success of our business is driven by the efforts of our hard-working employees. We know that we must work to identify, attract and retain best-in-class diverse talent. Our goal is to build a pipeline mapping the right people to the right value-driving roles. Fostering a culture that incentivizes the right behavior and allows for a best talent wins environment will help achieve our operational and financial objectives.

Our performance has strengthened our earnings profile and balance sheet and positions us well to continue the execution of our strategy throughout the business cycle. To accomplish our strategy, U. S. Steel will continue to evaluate potential strategic and organizational opportunities, which may include the acquisition, divestiture or consolidation of assets. Given the cyclicality of our industry, we are focused on strategically maintaining and spending cash (including capital investments under our asset revitalization program), in order to invest in areas consistent with our long-term strategy, such as sustainable steel technologies, and are considering various possibilities, including exiting lines of business and the sale of certain assets, that we believe would ultimately result in a stronger balance sheet and greater stockholder value. The Company will pursue opportunities based on its long-term strategy, and what the Board of Directors determines to be in the best interests of the Company's stockholders at the time.

Steel Innovation

We are continuing to develop the next generation of steel products for our customers. Our Generation 3 (GEN3) steel, the XG3™ steel, will provide superior formability and high-strength properties while using a low-alloyed approach for robust weldability. To expand our capabilities in GEN3 steels, a new continuous galvanizing line is currently under construction at our PRO-TEC Coating Company joint venture (PRO-TEC), which will allow PRO-TEC to produce these GEN3 steels with a hot-dipped zinc coating. This line will be the first of its kind and will utilize proprietary technology capable of producing the high-quality, cutting-edge advanced high-strength steels that will meet our automotive customers’ needs and solve some of their most pressing challenges.

Asset Revitalization

In 2017, we launched our asset revitalization program, a multi-year, comprehensive $2 billion investment in our most critical assets within our Flat-rolled segment. The program is composed of many projects designed to continuously improve safety, quality, delivery and cost performance. We expect capital spending for the entire program to be approximately $1.5 billion. As we revitalize our assets, we are increasing profitability, productivity and operational

stability, and reducing volatility. This program is designed to prioritize investment in the areas with the highest returns.

Importantly, while this is a large program, most projects are not complex, making projects easier to execute. Due to the smaller nature of many of the projects, we do not have to complete the entire program in order to start seeing benefits, as evident in our 2018 performance. Also, by breaking the program down into a series of smaller projects, we have greater flexibility to adjust the scope and pace of project implementation based on changes in business conditions. Our asset revitalization program covers investments in our existing assets and involves investments beyond routine capital and maintenance spending. These projects are expected to deliver both operational and

Table of Contents

commercial benefits, with most of the benefits coming from operational improvements. The commercial benefits we expect to realize will be driven primarily by things we can control, such as better product quality, improved delivery performance, and increased throughput on constrained assets. Being regarded as a top quartile performer in the eyes of our customers will support sustainable commercial benefits from these investments. We will deliver products to our customers with improved reliability and quality. While this program only covers our existing assets, it will create a stable foundation for our future as we continue to evaluate strategic growth projects to strengthen our position as the markets we serve continue to grow and evolve.

We designed a performance scorecard to measure our success in implementing the asset revitalization program, focusing on two financial metrics (EBITDA and capital expenditures) and two non-financial metrics (quality and reliability). We set a goal for each metric that we plan to achieve as we exit 2020, as compared to our 2016 performance for each metric. To monitor our progress, we also set interim annual goals within each metric, and report progress against those metrics annually. We continued to make good progress in 2018 on our asset revitalization program and exceeded the scorecard targets we had committed to for 2018. We disclosed our 2019 targets for each of these metrics in January 2019 and are focused on achieving our goals.

Benefits from the program are noticeable and include operational impacts achieved through asset key performance indicator improvement and the commercial impact of additional throughput as a result of our investments.

Our quality metric, which is based on internal diversion and retreat volumes only, improved 19% in 2018 versus the base period. We are seeing substantial improvements in addition to internal diversion and retreat volumes, particularly in customer claims and the cost of poor quality as a result of our asset revitalization efforts. Going forward, we are considering expanding the scope of the quality metric to also include these types of important quality measures. We believe an expanded metric could provide a more comprehensive quality measurement. No decision regarding a change in the quality metric has been made. We are implementing reliability-centered maintenance focusing on thirteen priority assets and a few others within our Flat-Rolled segment. Our reliability metric improved 16% versus the 2016 base period. We are running our assets more reliably resulting in improved operating equipment effectiveness. As a result of these improvements, we have increased throughput versus 2016 despite additional planned outages. Exiting 2020, we expect to be capable of producing approximately one million more tons of slabs on existing assets at Gary Works, Great Lakes Works, and Mon Valley Works as compared with actual production in 2016.

Safety

U. S. Steel has a long-standing commitment to the safety and health of the men and women who work in our facilities. Safety is our primary core value. Every employee deserves to return home safely at the end of every day, and we are working to eliminate all injuries and incidents at all of our facilities. Ensuring a safe workplace also improves productivity, quality, reliability and financial performance. By making safety and health a personal responsibility, our employees are making a daily commitment to follow safe work practices, look out for the safety of co-workers and ensure safe working conditions for everyone. A “Safety First” mindset is as essential to our success as the tools and technologies we rely on to do business.

Our objective is to attain a sustainable zero harm culture supported by leadership and owned by an engaged and highly skilled workforce, empowered with the capabilities and resources needed to assess, reduce, and eliminate workplace risks and hazards. In support of these objectives, we have developed an enhanced Safety Management System, initiated new safety communication methods and enhanced contractor safety processes. We experienced zero work-related fatalities among our employees and contractors in 2018.
U. S. Steel finished 2018 with a Global Total OSHA Recordable Rate of 0.95, which is 63% better than the Bureau of Labor Statistics for Iron & Steel rate of 2.60 and 30% better than American Iron and Steel Institute rate of 1.36. U. S.

Steel finished 2018 with a Days Away From Work Rate of 0.14, which is 80% better than the Bureau of Labor Statistics for Iron & Steel rate of 0.70 and 46% better than American Iron and Steel Institute rate of 0.26. Additionally, when comparing our most severe injuries - cases involving 31 or more days away from work - U. S. Steel performs at a level almost 13 times better than the Bureau of Labor Statistics for Iron and Steel.
The 10 year performance for our key safety measures: Total Recordable Incidence and Days Away From Work rates are shown in the following graphs.

23

Table of Contents

Table of Contents

Environmental Stewardship

U. S. Steel is committed to effective environmental stewardship. We have implemented and continue to develop business practices that are environmentally effective. We believe part of being a good corporate citizen requires a dedicated focus on how our industry affects the environment. U. S. Steel's environmental expenditures totaled $350 million in 2018, $255 million in 2017 and $232 million in 2016. Overall, environmental compliance expenditures represent approximately 2% of U. S. Steel’s total costs and expenses. For further information, see “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations – Environmental Matters.” We have taken the actions described below in furtherance of that goal.

U. S. Steel, largely through the American Iron and Steel Institute (AISI), World Steel Association and the European Confederation of Iron and Steel Industries (Eurofer), is involved in the promotion of cost effective environmental strategies through the development of appropriate air, water, waste and climate change laws and regulations at the local, state, national and international levels.

We are committed to reducing emissions as well as our carbon footprint. We have investigated, created and implemented innovative, best practice solutions throughout U. S. Steel to manage and reduce energy consumption. We are also committed to investing in technologies to further improve the environmental performance of our steelmaking process. In addition, we continue to focus on implementing energy reduction strategies, use of efficient energy sources, waste reduction management and the utilization of by-product fuels.

According to the AISI, relative to competing materials, steel has approximately one-fifth the carbon footprint of aluminum, one-twelfth the footprint of magnesium, and one-ninth the footprint of carbon fiber composites. Our advanced high strength steel (AHSS) used in today’s vehicles afford significant light-weighting opportunities that assist the automobile industry in meeting ever-increasing fuel economy standards while enhancing a vehicle's safety and engine performance. When comparing steel to aluminum, in terms of sustainability, steel has a smaller carbon footprint and costs less.

In 2018 alone, U. S. Steel recycled 3.2 million tons of purchased and produced steel scrap. Because of steel’s physical properties, our products can be recycled at the end of their useful life without loss of quality, contributing to steel’s high recycling rate and affordability. Comparatively, due to limitations in aluminum processing, very little recycled aluminum is included in aluminum sheet goods used for automotive or aircraft applications. This means that any increased use of aluminum sheet for high-end applications must come from Greenhouse Gas (GHG) intensive primary aluminum, which generates significantly more GHG emissions than steel.

Many of our major production facilities have Environmental Management Systems that are certified to the ISO 14001 Standard. This standard, published by the International Organization for Standardization (ISO), provides the framework for the measurement and improvement of environmental impacts of the certified facility.

In April of 2018, we released our 2017 Sustainability Report in which we have committed to establishing a GHG emission reduction goal by the end of 2019. We are gathering data to establish our GHG emissions baseline to help us prioritize reduction strategies and allocate the necessary capital. We are committed to reducing energy usage and have implemented projects, including replacing incandescent lights with LED lighting, to reduce electricity consumption and are utilizing monitoring and predictive modeling to increase energy efficiencies and reduce natural gas and electricity consumption. By using the blast furnace and coke oven gas generated in our cokemaking and steelmaking activities to power our facilities, we avoided consuming natural gas and other fuels from 2015 to 2018 to heat more than 3.8 million households each year. In 2018, we recycled approximately 3 million tons of blast furnace slag and 0.4 million tons of steel slag by selling it for use as aggregate and in highway construction.

Commercial Strategy

Our commercial strategy is focused on providing customer focused solutions with value-added steel products, including AHSS leadership with GEN3 steels, coated sheets for the automotive and appliance industries, electrical steel sheets for the manufacture of motors and electrical equipment, both bare and prepainted galvanized and Galvalume® sheets for construction, hot rolled skelp used in the production of energy transmitting line pipe, tin mill products for the packaging industry and pipe, connections, accessories and rig site services for use in drilling for oil and gas.

We are responsive to our customers' changing needs by developing new steel products and uses for steel that meet the evolving market and regulatory demands imposed on them. In connection with this commitment, we have research centers in Pittsburgh, Pennsylvania, and Košice, Slovakia, an automotive center in Troy, Michigan and a Research

and Development Laboratory and Test Facility for Tubular products in Houston, Texas. The focus of these centers is to develop new products and to collaborate with our customers to better provide innovative solutions to serve their needs.

For automotive markets, we developed the first commercially available coated AHSS and GEN3 steels. We are constructing a first of its kind GEN3 hot dipped galvanize line at PRO-TEC and have embedded application engineers at original equipment manufacturers to demonstrate how to best utilize the material in body design to meet automobile passenger safety requirements while significantly reducing weight to meet future vehicle fuel efficiency standards.

In our tubular markets, we continue development of premium and semi-premium tubular connections designed for our customers operating in challenging drilling environments. These connections optimize performance and provide outstanding sealing capabilities for onshore and offshore oil and gas drilling. An example is the USS-EAGLE SFH™ which was introduced in 2017 for customers drilling deep, high-pressure horizontal onshore natural gas and oil wells in North America. Please refer to Item I. Business Strategy for further details of related strategies.

Workforce

At U. S. Steel, we are committed to attracting, developing, and retaining a workforce of talented and diverse people — all working together to deliver superior results for our Company, stockholders, customers and communities. We regularly review our human capital needs and prioritize our efforts to sustain and enhance our competitive position in the markets we serve.

Most hourly employees of U. S. Steel's flat-rolled, tubular, cokemaking and iron ore operations in the United States are covered by collective bargaining agreements with the United Steelworkers (USW) entered into effective September 1, 2018 (the 2018 Labor Agreements) that expire on September 1, 2022. The 2018 Labor Agreements include a signing bonus for each eligible USW-represented employee (which was paid in December of 2018) and annual wage increases of 4%, 3.5%, 3.5% and 3% effective September 1, 2018, 2019, 2020 and 2021, respectively. Additionally, the 2018 Labor Agreements provide for certain employee benefit modifications to our defined benefit pension plan and increases to the contribution rate per hour to our multiemployer plan covering certain USW employees from $2.65 per hour to $3.15, $3.35, and $3.50 per hour effective January 1, 2019, 2020 and 2021, respectively. During the fourth quarter of 2018, U. S. Steel recorded a charge of approximately $81 million for the 2018 Labor Agreements signing bonus and related costs.

Capital Structure and Liquidity

Our primary financial goal is to enhance stockholder value by utilizing our capital structure, liquidity, and financial flexibility to deploy cash to generate stockholder value. Our cash deployment strategy is aligned to our strategic priorities, and includes: revitalizing our capital, both human and equipment; maintaining a strong balance sheet and a healthy pension plan; and delivering sustainable growth with a focus on core values such as safety and environmental stewardship. Cash deployment is also performed with a customer-centric focus on improving safety, quality, delivery and cost.

Our improved financial profile in 2018 provided us with the opportunity to announce a $300 million stock repurchase program that is authorized through 2020. Together with our common stock dividend, this program represents a sustainable and balanced stockholder return framework within our capital structure.

Our liquidity supports our ability to satisfy short-term obligations, fund working capital requirements, and provides a foundation to execute key strategic initiatives such as our asset revitalization program.

We are focused on maintaining a strong balance sheet and sustaining improved credit ratings, and may proactively manage our company's debt maturity profile from time to time to protect our capital structure from unforeseen external events and re-financing risks.

In 2018, we undertook several steps to support these goals. The Company issued $650 million of 6.250% Senior Notes due March 15, 2026 and received net proceeds of approximately $640 million, which together with cash on hand was used for a cash tender offer followed by a redemption of all of our outstanding 2021 Senior Secured Notes. We also entered into a fourth amended and restated $1.5 billion revolving credit facility maturing in February 2023. USSK entered into a new €460 million five-year revolving credit facility maturing in September 2023. USSK drew down €200 million (approximately $228 million) from the USSK Credit Agreement. Using available cash on hand together with

Table of Contents

funds repatriated from USSK to its parent, U. S. Steel, redeemed all of our outstanding 2020 Senior Notes. During 2018 we reduced debt by $322 million. We ended 2018 with $2.8 billion of total liquidity.

Steel Industry Background and Competition

The global steel industry is cyclical, highly competitive and has historically been characterized by overcapacity.

U. S. Steel's competitive position may be affected by, among other things, differences among U. S. Steel's and its competitors' cost structure, labor costs, environmental remediation and compliance costs, global capacity and the existence and magnitude of government subsidies provided to competitors.

U. S. Steel competes with many North American and international steel producers. Competitors include integrated producers, which, like U. S. Steel, use iron ore and coke as the primary raw materials for steel production, as well as electric arc furnace (EAF) producers, which primarily use steel scrap and other iron-bearing feedstocks as raw materials. Global steel capacity has continued to increase, with some published sources estimating for 2018 that steel capacity in China alone is over one billion metric tonnes per year versus steel demand in China estimated at approximately 800 million metric tonnes. In addition, other materials, such as aluminum, plastics and composites, compete with steel in several applications.

EAF producers typically require lower capital expenditures for construction of facilities and may have lower total employment costs; however, these competitive advantages may be minimized or eliminated by the cost of scrap when scrap prices are high. Some mini-mills utilize thin slab casting technology to produce flat-rolled products and are increasingly able to compete directly with integrated producers in many flat-rolled product applications previously produced only by integrated steelmakers.

U. S. Steel provides defined benefit pension and/or other post-employment benefits to approximately 90,000 current employees, retirees and their beneficiaries. Many of our competitors do not have comparable retiree obligations. Participation in U. S. Steel's main defined benefit pension plan was closed to new entrants on July 1, 2003 and benefit accruals for all non-represented participants were frozen effective December 31, 2015. Participation in U. S. Steel’s retiree medical and life insurance programs for USW-represented employees were closed to employees hired or rehired (except in limited circumstances) on or after January 1, 2016. Retiree medical and life insurance benefits for non-represented employees were eliminated for those who retired after December 31, 2017.

We believe that our major North American and many European integrated steel competitors are confronted with substantially similar environmental regulatory conditions and therefore do not believe that our relative position with regard to such competitors will be materially affected by the impact of environmental laws and regulations. However, if future regulations do not recognize the fact that the integrated steel process involves a series of chemical reactions involving carbon that create carbon dioxide (CO_2) emissions without linking these emissions to steel scrap as well, our competitive position relative to mini-mills will be adversely impacted. Our competitive position compared to producers in developing nations such as China, Russia, Ukraine, Turkey, Brazil and India, will be harmed unless such nations require commensurate reductions in CO_2 emissions. Competing materials such as plastics may not be similarly impacted. The specific impact on each competitor will vary depending on a number of factors, including the age and location of its operating facilities and its production methods. U. S. Steel is also responsible for remediation costs related to former and present operating locations and disposal of environmentally sensitive materials. Many of our competitors, including North American producers, or their successors, that have been the subject of bankruptcy relief have no or substantially lower liabilities for such environmental remediation matters.

Table of Contents

International Trade
U. S. Steel continues to face import competition, much of which is unfairly-traded, supported by foreign governments, and fueled by massive global steel overcapacity. Such practices, policies, and overcapacity impact the Company's operational and financial performance. U. S. Steel continues to lead the industry in efforts to address these challenges that threaten the Company, our workers, our stockholders, and our country's national and economic security.
Through a series of Presidential Proclamations pursuant to Section 232 of the Trade Expansion Act of 1962, as of the date of this filing, U.S. imports of certain steel products are subject to a 25 percent tariff, except for imports from: (1) Turkey, which are subject to a 50 percent tariff; (2) Argentina, Brazil, and South Korea, which are subject to restrictive quotas; and (3) Australia, which is not subject to either tariffs or quotas. The U.S. Department of Commerce (DOC) is managing a process in which U.S. companies may request and/or oppose temporary product exclusions from the Section 232 tariffs or quotas. Over 44,000 exclusions have been requested. U. S. Steel is actively opposing exclusion requests for products that are the same as, or substitute products for, those U. S. Steel produces.
Several legal challenges, trade measures, and retaliation actions have been initiated in response to the Section 232 action on steel. In the United States, on December 19, 2018 the U.S. Court of International Trade (CIT) held oral arguments in the American Institute for International Steel's constitutional challenge to the Section 232 statute.
Multiple countries have challenged the Section 232 action at the World Trade Organization (WTO), imposed retaliatory tariffs, and/or took action to safeguard their domestic steel industries from increased steel imports. Mexico imposed a 25 percent tariff on imports of U.S. steel and other products in June 2018. Canada imposed a countermeasure surtax of 25 percent on imports of U.S. steel and other products in July 2018 and a provisional safeguard in the form of tariff rate quotas (TRQs; 25 percent tariffs on imports that exceed the quota) on certain steel products in October 2018. The European Union imposed 25 percent retaliatory tariffs on imports of U.S. steel and other products in June 2018 and imposed a provisional TRQ safeguard on global steel imports in July 2018.
Retaliatory tariffs were also imposed by China, India, Russia, and Turkey. In response, the United States challenged the retaliation at the WTO. In November, multiple dispute panels were established for the Section 232 and retaliation disputes. Panel decisions are not expected until the fourth quarter of 2019 at the earliest.

On January 16, 2019, the European Commission (EC) announced its definitive TRQ safeguard on steel imports: 25 percent tariffs on certain steel imports that exceed quotas based on 105 percent of average import volumes for 2015-2017 and increasing 5 percent annually, effective February 2019 through June 2021.

Antidumping (AD) and countervailing duty (CVD or antisubsidy) duties currently apply in addition to the Section 232 tariffs and quotas and AD/CVD orders will last beyond the Section 232 action. Thus, U. S. Steel continues to actively defend and maintain the 54 AD/CVD orders and 11 EU AD/CVD orders covering products U. S. Steel produces in proceedings before the DOC, U.S. International Trade Commission (ITC), CIT, the U.S. Court of Appeals for the Federal Circuit, and the WTO, including the below favorable results achieved in 2018.

On January 30, 2018, the ITC voted to continue the 1995 AD order and current duties of up to 57.72 percent on seamless carbon and alloy steel standard, line, and pressure pipe from Germany for another five years.

On April 12, 2018, DOC announced the final results of the second administrative review of the AD order on oil country tubular goods (OCTG) from Korea, assigning AD rates of up to 75.81 percent.
On May 17, 2018, in response to circumvention petitions filed by U. S. Steel and other domestic steel producers in September 2016, the DOC found that imports of cold-rolled and corrosion-resistant steel made from Chinese substrate are covered by the AD/CVD orders on such imports from China. As a result of the DOC final determination, U.S. imports of cold-rolled steel from Vietnam made from Chinese hot-rolled steel are subject to 522.23 percent cash deposit requirements and U.S. imports of corrosion-resistant steel from Vietnam made from Chinese hot- or cold-rolled steel are subject to 238.48 percent cash deposit requirements, both retroactive to November 4, 2016. In December 2018, the CIT dismissed all appeals of DOC's circumvention determinations. In August 2018, in response to additional similar circumvention petitions filed in June 2018 by U. S. Steel and other domestic producers, DOC

initiated circumvention investigations on: (1) imports of cold-rolled and corrosion-resistant steel from Vietnam made from Korean substrate; and (2) imports of corrosion-resistant steel from Vietnam made from Taiwanese substrate.

On May 31, 2018 the ITC voted to continue the 2000 AD order and duties of up to 95.29 percent on tin mill products from Japan for another five years.

Table of Contents

In August through November 2018, the DOC announced the preliminary results of the first administrative reviews of the 2016 AD/CVD orders on hot-rolled, cold-rolled, and corrosion-resistant steel, with final results due four to six months after the preliminary results.

Following an investigation of China’s technology transfer and intellectual property violations by the U.S. Trade Representative (USTR) under Section 301 of the Trade Act of 1974, approximately $250 billion of U.S. imports from China, including finished steel couplings and some products used in steel production, are subject to 10 to 25 percent tariffs. On December 1, 2018, President Trump and Chinese President Xi agreed to a 90-day pause in the escalation of trade measures and continued negotiations on structural trade issues, including China's subsidies and government support of its steel industry. Though an agreement has not been publicly released, it appears to include a commitment by China to import more U.S. products (particularly agricultural products) and a commitment by the U.S. to delay the increase of the current Section 301 tariffs on $200 billion worth of Chinese exports to the U.S. from 10 percent to 25 percent as was planned to occur on January 1, 2019.

On November 30, 2018, the leaders of the United States, Mexico and Canada signed the United States-Mexico-Canada Agreement (USMCA), a new free trade agreement that is intended to replace the current North American Free Trade Agreement. USMCA contains several new provisions designed to increase the use of USMCA-origin steel and increase trade enforcement coordination among the three countries. To become law, the USMCA must be ratified and implemented by the three governments. The signing of USMCA does not change the current Section 232 steel action or retaliation thereto.

The G-20’s Global Forum on Steel Excess Capacity, created in 2016, continues to work to reduce global steel overcapacity, including agreeing on six principles and specific policy recommendations to address excess steel capacity in November 2017 and issuing a September 20, 2018 Ministerial Report on progress thus far. The Global Forum’s stated goal for 2019 is the full implementation of such principles and policy recommendations. The Organisation for Economic Co-operation and Development (OECD) Steel Committee and trilateral negotiations between the United States, EU, and Japan also continue to address global steel overcapacity. On January 9, 2019, the United States, EU, and Japan issued a joint statement instructing the finalization of text for proposals to reform WTO subsidies rules to address overcapacity by Spring 2019.

U. S. Steel continues to execute a broad, global strategy to maximize opportunities and navigate challenges presented by imports, global steel overcapacity, and international trade law and policy developments.

Table of Contents

Facilities and Locations as of December 31, 2018

Table of Contents

Flat-Rolled

During 2018, U. S. Steel continued to review and adjust its operating levels at several of its Flat-Rolled operations. Customer order rates will determine the size and duration of any adjustments that we make at our Flat-Rolled operations during 2019.

The operating results of all facilities within U. S. Steel’s integrated steel plants in the U.S. are included in Flat-Rolled. These facilities include Gary Works, Great Lakes Works, Mon Valley Works and Granite City Works. The operating results of U. S. Steel’s coke and iron ore pellet operations and many equity investees in North America are also included in Flat-Rolled.

Gary Works, located in Gary, Indiana, has annual raw steel production capability of 7.5 million tons. Gary Works has four blast furnaces, six steelmaking vessels, a vacuum degassing unit and four slab casters. Finishing facilities include a hot strip mill, two pickling lines, two cold reduction mills, three temper mills, a double cold reduction line, four annealing facilities and two tin coating lines. Principal products include hot-rolled, cold-rolled and coated sheets and tin mill products. Gary Works also produces strip mill plate in coil.

The Midwest Plant, located in Portage, Indiana, processes hot-rolled and cold-rolled bands and produces tin mill products, hot dip galvanized, cold-rolled and electrical lamination sheets. Midwest facilities include a pickling line, two cold reduction mills, two temper mills, a double cold reduction mill, two annealing facilities, two hot dip galvanizing lines, a tin coating line and a tin-free steel line.

East Chicago Tin is located in East Chicago, Indiana and produces tin mill products. Facilities include a pickling line, a cold reduction mill, two annealing facilities, a temper mill, a tin coating line and a tin-free steel line.

Great Lakes Works, located in Ecorse and River Rouge, Michigan, has annual raw steel production capability of 3.8 million tons. Great Lakes facilities include three blast furnaces, two steelmaking vessels, a vacuum degassing unit, two slab casters, a hot strip mill, a pickling line, a tandem cold reduction mill, three annealing facilities, a temper mill, a recoil and inspection line, two electrolytic galvanizing lines (one being the former Double Eagle Steel Coating Company's (DESCO) line) and a hot dip galvanizing line. Principal products include hot-rolled, cold-rolled and coated sheets.

Mon Valley Works consists of the Edgar Thomson Plant, located in Braddock, Pennsylvania; the Irvin Plant, located in West Mifflin, Pennsylvania; the Fairless Plant, located in Fairless Hills, Pennsylvania; and the Clairton Plant, located in Clairton, Pennsylvania. Mon Valley Works has annual raw steel production capability of 2.9 million tons. Facilities at the Edgar Thomson Plant include two blast furnaces, two steelmaking vessels, a vacuum degassing unit and a slab caster. Irvin Plant facilities include a hot strip mill, two pickling lines, a cold reduction mill, three annealing facilities, a temper mill and two hot dip galvanizing lines. The Fairless Plant operates a hot dip galvanizing line. Principal products from Mon Valley Works include hot-rolled, cold-rolled and coated sheets, as well as coke and coke by-products produced at the Clairton Plant.

The Clairton Plant is comprised of ten coke batteries with an annual coke production capacity of 4.3 million tons. Almost all of the coke we produce is consumed by U. S. Steel facilities. From time to time, we may swap coke with other domestic steel producers. Coke by-products are sold to the chemicals and raw materials industries.

Granite City Works, located in Granite City, Illinois, has annual raw steel production capability of 2.8 million tons. Granite City’s facilities includes two blast furnaces, two steelmaking vessels, two slab casters, a hot strip mill, a pickling line, a tandem cold reduction mill, a hot dip galvanizing line and a hot dip galvanizing/Galvalume® line.

Principal products include hot-rolled and coated sheets. Gateway Energy and Coke Company LLC (Gateway) constructed a coke plant, which began operating in October 2009 to supply Granite City Works with its coke needs, under a 15-year agreement with Suncoke. U. S. Steel owns and operates a cogeneration facility that utilizes by-products from the Gateway coke plant to generate heat and power. During December 2015, the Granite City Works steelmaking operations and hot strip mill were temporarily idled. The steelmaking operations and hot strip mill were restarted during 2018 and 2017, respectively.

Fairfield Works, located in Fairfield, Alabama, consists of the #5 coating line.

U. S. Steel owns a Research and Technology Center located in Munhall, Pennsylvania (near Pittsburgh) where we carry out a wide range of applied research, development and technical support functions.

Table of Contents

U. S. Steel also owns an automotive technical center in Troy, Michigan. This facility brings automotive sales, service, distribution and logistics services, product technology and applications research into one location. Much of U. S. Steel’s work in developing new grades of steel to meet the demands of automakers for high-strength, light-weight and formable materials is carried out at this location.

U. S. Steel has iron ore pellet operations located at Mt. Iron (Minntac) and Keewatin (Keetac), Minnesota with annual iron ore pellet production capability of 22.4 million tons. During 2018, 2017 and 2016, these operations produced 21.8 million, 21.1 million and 15.0 million tons of iron ore pellets, respectively.

Joint Ventures Within Flat-Rolled

U. S. Steel participates in a number of joint ventures that are included in Flat-Rolled, most of which are conducted through subsidiaries. All of these joint ventures are accounted for under the equity method. The significant joint ventures and other investments are described below. For information regarding joint ventures and other investments, see Note 12 to the Consolidated Financial Statements.

U. S. Steel has a 14.7 percent ownership interest in Hibbing Taconite Company (Hibbing), which is based in Hibbing, Minnesota. Hibbing’s rated annual production capability is 9.1 million tons of iron ore pellets, of which our share is about 1.3 million tons.

U. S. Steel and POSCO of South Korea participate in a 50-50 joint venture, USS-POSCO Industries (UPI), located in Pittsburg, California. The joint venture markets sheet and tin mill products, principally in the western United States. UPI produces cold-rolled sheets, galvanized sheets, tin plate and tin-free steel from hot bands principally provided by POSCO and U. S. Steel. UPI’s annual production capability is approximately 1.5 million tons.

U. S. Steel and Kobe Steel, Ltd. of Japan participate in a 50-50 joint venture, PRO-TEC Coating Company (PRO-TEC). PRO-TEC owns and operates two hot dip galvanizing lines and a continuous annealing line (CAL) in Leipsic, Ohio, which primarily serve the automotive industry. PRO-TEC’s annual production capability is approximately 1.5 million tons. U. S. Steel's domestic production facilities supply PRO-TEC with cold-rolled sheets and U. S. Steel markets all of PRO-TEC's products. The CAL produces high strength, lightweight steels that are an integral component in automotive manufacturing as vehicle emission and safety requirements become increasingly stringent. On September 25, 2017, U. S. Steel and Kobe Steel, Ltd. announced their agreement to begin construction of a new continuous galvanizing line (CGL) at PRO-TEC, in response to increased demand for advanced high-strength steels (AHSS). The new CGL, an investment of approximately $400 million financed by the joint venture, will have a yearly capacity of 500,000 tons. This line, which will utilize a proprietary process, will be capable of coating steel that will help automakers manufacture economically lightweight vehicles to meet increasing fuel efficiency requirements while maintaining exceptionally high safety standards. Construction began in the fourth quarter of 2017 and the line is expected to commence startup in 2019.

U. S. Steel and ArcelorMittal participate in the Double G Coatings Company, L.P. a 50-50 joint venture (Double G), which operates a hot dip galvanizing and Galvalume® facility located near Jackson, Mississippi and primarily serves the construction industry. Double G processes steel supplied by each partner and each partner markets the steel it has processed by Double G. Double G’s annual production capability is approximately 315,000 tons.

U. S. Steel and Worthington Industries, Inc. participate in Worthington Specialty Processing (Worthington), a joint venture with locations in Jackson, Canton, and Taylor, Michigan, in which U. S. Steel has a 49 percent interest. Worthington slits, cuts to length, and presses blanks from steel coils to desired specifications. Worthington’s annual production capability is approximately 890,000 tons.

Chrome Deposit Corporation (CDC), a 50-50 joint venture between U. S. Steel and Court Holdings, reconditions finishing work rolls, which require grinding, chrome plating and/or texturing. The rolls are used on rolling mills to provide superior finishes on steel sheets. CDC has seven locations across the United States, with all locations near major steel plants.

U. S. Steel holds a 49 percent interest in Feralloy Processing Company (FPC), a joint venture between U. S. Steel and Feralloy Corporation, which converts coiled hot strip mill plate into sheared and flattened plates. The plant, located in Portage, Indiana, has annual production capability of approximately 275,000 tons.

U. S. Steel and Feralloy Corporation, participated in a joint venture, Acero Prime, S. de R.L. de C.V. (Acero Prime). U. S. Steel had a 40 percent interest. In October 2018, a subsidiary of U. S. Steel completed the sale of its ownership interest in Acero Prime, which has facilities in San Luis Potosi, Ramos Arizpe, Monterrey, and Toluca, Mexico.

USSE

USSE operates an integrated facility in Košice, Slovakia, which has annual raw steel production capability of 5.0 million tons. This facility has two coke batteries, four sintering strands, three blast furnaces, four steelmaking vessels, a vacuum degassing unit, two dual strand casters, a hot strip mill, two pickling lines, two cold reduction mills, four annealing facilities, a temper mill, a temper/double cold reduction mill, three hot dip galvanizing lines, two tin coating lines, three dynamo lines, a color coating line and two spiral welded pipe mills. USSE also has multiple slitting, cutting and other finishing lines for flat products. Principal products include hot-rolled, cold-rolled and coated sheets, tin mill products and spiral welded pipe. USSE also has facilities for manufacturing heating radiators, refractory ceramic materials and has a power plant for internal steam and electricity generation.

In addition, USSE has a research laboratory, which, in conjunction with our Research and Technology Center, supports efforts in coke making, electrical steels, design and instrumentation, and ecology.

Tubular

Tubular manufactures seamless and welded OCTG, standard pipe, line pipe and mechanical tubing.

Seamless products are produced at Fairfield Tubular Operations in Fairfield, Alabama and Lorain Tubular Operations located in Lorain, Ohio. The Fairfield Tubular Operations has annual production capability of 750,000 tons and has historically been supplied with steel rounds from Flat-Rolled’s former Fairfield Works. Subsequent to the shutdown of the hot end at the Fairfield Works in August 2015, the facility is currently purchasing rounds from third parties. The Fairfield Tubular Operations has the capability to produce outer diameter (O.D.) sizes from 4.5 to 9.875 inches and has quench and temper, hydrotester, threading and coupling and inspection capabilities. On February 11, 2019, U. S. Steel announced plans to restart the delayed electric arc furnace (EAF) capital project located in Fairfield, Alabama. The new EAF will have an annual capacity of approximately 1.6 million tons. The EAF is expected to commence startup in the second half of 2020. The slab and rounds casters of the former Fairfield Works remain capable of operation and are now part of the Fairfield Tubular Operations. The Lorain plant consists of the #3 facility and has historically consumed steel rounds supplied by Fairfield Works and external sources. Subsequent to the shutdown of the hot end at the Fairfield Works, the Company is sourcing rounds from third parties. Lorain #3 facility has the capability to produce 380,000 tons annually in O.D. sizes from 10.125 to 26 inches and has quench and temper, hydrotester, cutoff and inspection capabilities. In March 2017, U. S. Steel made the strategic decision to permanently shutdown the Lorain No. 6 Quench & Temper Mill.

Welded products are produced at Lone Star Tubular Operations #2 facility in Lone Star, Texas and it has the capability to produce O.D. sizes from 1.088 to 7.15 inches. The Lone Star #2 facility has annual production capability of 390,000 tons. On February 4, 2019, U. S. Steel announced plans to restart the #1 Electric-Weld Pipe mill at Lone Star Tubular Operations that was idled in 2016. The #1 mill has annual production capability of 400,000 tons. Lone Star Tubular Operations also has quench and temper, hydrotester, threading and coupling and inspection capabilities.

Wheeling Machine Products manufactures couplings used to connect individual sections of oilfield casing and tubing. It produces sizes ranging from 2.375 to 20 inches at two locations: Pine Bluff, Arkansas, and Hughes Springs, Texas.

Tubular Processing, located in Houston, Texas, provides quench and temper and end-finishing services for oilfield production tubing. Offshore Operations, also located in Houston, Texas, provides threading and coupling, inspection,

accessories and storage services to the OCTG market. Tubular Processing has been temporarily idled since 2015.

We have a Research and Development Laboratory and Test Facility in Houston, Texas where our engineers develop and test new steel products, including premium connections.

Joint Ventures Within Tubular

U. S. Steel and Butch Gilliam Enterprises LLC participate in a 50-50 joint venture, Patriot Premium Threading Services, LLC located in Midland, Texas, which provides oil country threading, accessory threading, repair services and rig site services to exploration and production companies located principally in the Permian Basin. For information regarding joint ventures and other investments, see Note 12 to the Consolidated Financial Statements.

Table of Contents

Other Businesses

U. S. Steel’s Other Businesses include railroad services and real estate operations.

U. S. Steel owns the Gary Railway Company in Indiana, Lake Terminal Railroad Company and Lorain Northern Company in Ohio, Union Railroad Company, LLC in Pennsylvania, Fairfield Southern Company, Inc. in Alabama, Delray Connecting Railroad Company in Michigan and Texas & Northern Railroad Company in Texas. These entities comprise U. S. Steel’s transportation business.

U. S. Steel owns, develops and manages various real estate assets, which include approximately 50,000 acres of surface rights primarily in Alabama, Michigan, Minnesota, Pennsylvania and Illinois. In addition, U. S. Steel holds ownership interests in a joint venture that is developing real estate projects in Alabama.

Raw Materials and Energy

As an integrated producer, U. S. Steel’s primary raw materials are iron units in the form of iron ore pellets and sinter ore, carbon units in the form of coal and coke (which is produced from coking coal) and steel scrap. U. S. Steel’s raw materials supply strategy consists of acquiring and expanding captive sources of certain primary raw materials and entering into flexible supply contracts for certain other raw materials at competitive market prices which are subject to fluctuations based on market conditions at the time.

The amounts of such raw materials needed to produce a ton of steel will fluctuate based upon the specifications of the final steel products, the quality of raw materials and, to a lesser extent, differences among steel producing equipment. In broad terms, U. S. Steel consumes approximately 1.4 tons of coal to produce one ton of coke and then it consumes approximately 0.3 tons of coke, 0.3 tons of steel scrap (45 percent of which is internally generated) and 1.3 tons of iron ore pellets to produce one ton of raw steel. At normal operating levels, we also consume approximately 6 mmbtu’s of natural gas per ton produced. While we believe that these estimated consumption amounts are useful for planning purposes, and are presented to give a general sense of raw material and energy consumption related to steel production, substantial variations may occur.

Iron Ore

Iron Ore Production[(a)]

[(a)] Includes our share of production from Hibbing through December 31, 2018 and Tilden to September 29, 2017. U. S. Steel's ownership interest in Tilden was sold on September 29, 2017. The decrease in iron ore production from 2014 is primarily related to the idling of our Keetac facility. In 2017, the Keetac facility restarted production.

The iron ore facilities at Minntac and Keetac contain an estimated 838 million short tons of recoverable reserves and our share of recoverable reserves at the Hibbing joint venture is 7 million short tons. Recoverable reserves are defined as the tons of product that can be used internally or delivered to a customer after considering mining and beneficiation or preparation losses. Minntac and Keetac’s annual capability and our share of annual capability for the Hibbing joint

Table of Contents

venture total approximately 24 million tons. Through our wholly owned operations and our share of our joint venture, we have iron ore pellet production capability that exceeds our steelmaking capability in the U.S.
We sold iron ore pellets in 2018, 2017 and 2016 to third parties. The Company has agreements to supply iron ore pellets to third-party customers over the next several years.

Substantially all of USSE’s iron ore requirements are purchased from outside sources, primarily Russian and Ukrainian mining companies. Prices for European contracts are negotiated quarterly. In certain prior years, USSE also received iron ore from U. S. Steel’s iron ore facilities in North America. We believe that supplies of iron ore adequate to meet USSE’s needs are available at competitive market prices.

Coking Coal

All of U. S. Steel’s coal requirements for our cokemaking facilities are purchased from outside sources. Pricing for Flat-Rolled's coking coal contracts are typically negotiated on a yearly basis, and from time to time we have entered into multi-year agreements for a portion of our coking coal requirements.
Prices for European contracts are negotiated at defined intervals, predominantly annually.
We believe that supplies of coking coal adequate to meet our needs are available from outside sources at competitive market prices. The main source of coking coal for Flat-Rolled is the United States, and sources for USSE include Poland, the Czech Republic, Russia, Ukraine, Mozambique and the United States.
Coke
Coke Production[a]
[a] The decrease in 2016 coke production from 2015 was due to decreased internal steel production and depletion of existing coke inventory. The decrease in 2015 coke production from 2014 is due to the permanent shutdown of coke operations at Gary Works and Granite City Works.

In North America, the Flat-Rolled segment operates a cokemaking facility at the Clairton Plant of Mon Valley Works. At our Granite City Works, we also have a 15-year coke supply agreement with Gateway which began in 2009. Blast furnace injection of coal, and self-generated coke oven gas is also used to reduce coke usage.

With Flat-Rolled’s cokemaking facilities and the Gateway long-term supply agreement, it has the capability to be nearly self-sufficient with respect to its annual coke requirements at normal operating levels. Coke from time to time has been purchased from, sold to, or swapped with suppliers and other end-users to adjust for production needs and reduce transportation costs.
In Europe, the USSE segment operates cokemaking facilities at USSK. While USSE is self-sufficient for coke at normal operating levels, it periodically purchases coke from Polish and Czech coke producers to meet production needs. Volume and price are negotiated quarterly.

Steel Scrap and Other Materials

We believe that supplies of steel scrap, alloys and coating materials adequate to meet our needs to support Flat-Rolled and USSE are readily available from outside sources at competitive market prices. Generally, approximately 45 percent of our steel scrap requirements are internally generated through normal operations.

Limestone

All of Flat-Rolled’s and USSE's limestone requirements are purchased from outside sources. We believe that supplies of limestone adequate to meet our needs are readily available from outside sources at competitive market prices.

Zinc and Tin

We believe that supplies of zinc and tin required to fulfill the requirements for Flat-Rolled and USSE are available from outside sources at competitive market prices. For Flat-Rolled, the main sources of zinc are Canada, Peru and Mexico and the main sources of tin are Bolivia and Peru. For USSE, the main sources of zinc are Sweden, the Slovak Republic, Netherlands and Poland and the main sources of tin are Bolivia, Indonesia and Peru.

During 2018, Flat-Rolled protected approximately 45% and 50% of its operation's zinc and tin purchases, respectively, with financial swap derivatives to manage exposure to zinc and tin price fluctuations. During 2018, USSE protected approximately 30% of its operation's zinc purchases with forward physical contracts to manage exposure to zinc price fluctuations. Also during 2018, USSE protected approximately 25% of its operation's tin purchases with forward physical contracts and 15% of its operation's tin purchases with financial swaps to manage our exposure to tin price fluctuations. For further information, see Note 16 to the Consolidated Financial Statements.

Natural Gas

All of U. S. Steel’s natural gas requirements are purchased from outside sources.

We believe that adequate supplies to meet Flat-Rolled’s and Tubular's needs are available at competitive market prices. For 2018, approximately 20 percent of our natural gas purchases in Flat-Rolled were based on bids solicited on a monthly basis from various vendors; the remainder were made daily or with term agreements.

We believe that adequate natural gas supplies to meet USSE’s needs are available at competitive market prices. During 2018, we routinely executed fixed-price forward physical purchase contracts for natural gas to partially manage our exposure to natural gas price increases. For 2018, approximately 55 percent of our natural gas purchases in USSE were made with fixed-price forward physical purchase contracts; the remainder were based on bids solicited on a quarterly, monthly or a daily basis from various vendors.

Both Flat-Rolled and USSE use self-generated coke oven and blast furnace gas to reduce consumption of natural gas. USSE also captures and consumes converter gas from its four steelmaking vessels.

Industrial Gases

U. S. Steel purchases industrial gas in the U.S. under long-term contracts with various suppliers. USSE owns and operates its own industrial gas facilities, but also may purchase industrial gases from time to time.

Commercial Sales of Product

U. S. Steel characterizes sales as contract sales if sold pursuant to an agreement with a defined volume and pricing and a duration of longer than three months, and as spot if sold without a defined volume and pricing agreement. In 2018, approximately 80 percent, 70 percent and 28 percent of sales by Flat-Rolled, USSE and Tubular, respectively, were contract sales. Some contract pricing agreements include fixed prices while others are adjusted periodically based upon published prices of steel products or cost components.

Table of Contents

Environmental Matters, Litigation and Contingencies
Some of U. S. Steel’s facilities were in operation before 1900. Although management believes that U. S. Steel’s environmental practices have either led the industry or at least been consistent with prevailing industry practices, hazardous materials may have been released at current or former operating sites or delivered to sites operated by third parties.

Our U.S. facilities are subject to environmental laws applicable in the U.S., including the Clean Air Act (CAA), the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as well as state and local laws and regulations.

U. S. Steel has incurred and will continue to incur substantial capital, operating, and maintenance and remediation expenditures as a result of environmental laws and regulations, related to release of hazardous materials, which in recent years have been mainly for process changes to meet CAA obligations and similar obligations in Europe.

Midwest Plant Incident

On April 11, 2017, there was a process waste water release at our Midwest Plant (Midwest) in Portage, Indiana that impacted a water outfall that discharges to Burns Waterway near Lake Michigan. U. S. Steel identified the source of the release and made the necessary repairs. We determined that all repairs were safely working as intended and, on April 14, 2017, resumed operations in a controlled, phased and highly monitored approach with extensive input from participating government agencies. The Company has since implemented substantial operational, process and notification improvements at Midwest. In January of 2018, The Surfrider Foundation and the City of Chicago initiated suits in the Northern District of Indiana alleging CWA and Permit violations at Midwest. On April 2, 2018, the United States Environmental Protection Agency (U.S. EPA) and the State of Indiana initiated a separate action against the Company and lodged a Consent Decree negotiated between U. S. Steel and the relevant governmental agencies consisting of all material terms to resolve the CWA and National Pollutant Discharge Elimination System (NPDES) violations at the Midwest Plant. A public comment period for the Consent Decree ensued. U. S. Steel, U.S. EPA and the State of Indiana continue the process of reviewing and addressing those comments. The Surfrider Foundation and the City of Chicago initially agreed to stay their actions pending finalization of the Consent Decree, but filed a motion to lift that stay in July 2018. On September 13, 2018, both The Surfrider Foundation and the City of Chicago filed motions to intervene in the Consent Decree case. On December 6, 2018, the court denied the Surfrider Foundation and City of Chicago's motion to lift the stay in the citizen suit case, and on December 13, 2018 the court granted the Surfider Foundation and City of Chicago's motion to intervene in the Consent Decree case. The citizens groups filed their Complaints-in-Intervention on December 27, 2018, and Amended Complaints-in-Intervention on January 17, 2019. U. S. Steel continues to work with United States Department of Justice, U.S. EPA, and Indiana Department of Environmental Management towards a finalized Consent Decree.

EU Environmental Requirements and Slovak Operations
Under the Emission Trading Scheme (ETS), USSK's final allocation of free allowances for the Phase III period, which covers the years 2013 through 2020 is 48 million allowances. We estimate a shortfall of approximately 15 million allowances for the Phase III period. Based on projected future production levels, we started to purchase allowances in the third quarter of 2017 to meet the annual compliance submission in the future. As of December 31, 2018, we have purchased approximately 11 million European Union Allowances totaling €118 million (approximately $135 million). However, due to a number of variables such as the future market value of allowances, future production levels and future emissions intensity levels, we cannot reliably estimate the full cost of complying with the ETS regulations at this time.
The EU’s Industry Emission Directive requires implementation of EU determined best available techniques (BAT) for iron and steel production, to reduce environmental impacts as well as compliance with BAT associated emission levels. Our most recent broad estimate of future capital expenditures for projects that go beyond BAT requirements is

up to €138 million (approximately $158 million) over the 2017 to 2020 program period. These costs may be mitigated if USSK complies with certain financial covenants, which are assessed annually. USSK complied with these covenants as of December 31, 2018. If we are unable to meet these covenants in the future, USSK might be required to provide additional collateral (e.g. bank guarantee) to secure the full value of estimated expenditures. There could be increased operating costs associated with these projects, such as increased energy and maintenance costs. We are currently unable to reliably estimate what the increase in operating costs will be as many projects are still in the development stage.

Table of Contents

Due to other EU legislation, BAT for Large Combustion Plants (LCP), we were required to make changes to the boilers at our steam and power generation plant in order to comply with stricter air emission limits for large combustion plants. The requirements for LCP resulted in the construction of a new boiler and certain upgrades to our existing boilers. In January 2014, the operation of USSK's boilers was approved by the European Commission (EC) as part of Slovakia's Transitional National Plan (TNP) for bringing all boilers in Slovakia into compliance by no later than 2020. The TNP establishes emissions ceilings for each category of emissions (total suspended particulate, sulfur dioxide (SO_2), and nitrogen oxide (NOx)). The allowable amount of discharged emissions from existing boilers will decrease each year until mid-2020. These projects will result in a reduction in electricity, emissions, and operating, maintenance and waste disposal costs. The construction of both boilers is complete with a total final installed cost of €128 million (approximately $147 million).
For further discussion of laws applicable in Slovakia and the EU and their impact on USSK, see Note 26 to the Consolidated Financial Statements, “Contingencies and Commitments - Environmental Matters, EU Environmental Requirements.”

New and Emerging Environmental Regulations

United States and European Greenhouse Gas Emissions Regulations

Future compliance with CO_2 emission requirements may include substantial costs for emission allowances, restriction of production and higher prices for coking coal, natural gas and electricity generated by carbon based systems. Because we cannot predict what requirements ultimately will be imposed in the U.S. and Europe, it is difficult to estimate the likely impact on U. S. Steel, but it could be substantial. On March 28, 2017, President Trump signed Executive Order 13783 instructing the U.S. EPA to review the Clean Power Plan. On October 16, 2017, the U.S. EPA proposed to repeal the Clean Power Plan after reviewing the plan pursuant to President Trump’s executive order. Any repeal and/or replacement of the Clean Power Plan is likely to be challenged by various proponents of the plan, such as environmental groups and certain states. Any impacts to our operations as a result of any future greenhouse gas regulations are not estimable at this time since the matter is unsettled. In any case, to the extent expenditures associated with any greenhouse gas regulation, as with all costs, are not ultimately reflected in the prices of U. S. Steel's products and services, operating results will be reduced.

There have been no material changes in U. S. Steel’s exposure to European Greenhouse Gas Emissions regulations since December 31, 2017.

United States - Air

The CAA imposes stringent limits on air emissions with a federally mandated operating permit program and civil and criminal enforcement sanctions. The CAA requires, among other things, the regulation of hazardous air pollutants through the development and promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAP) and Maximum Achievable Control Technology (MACT) Standards. The U.S. EPA has developed various industry-specific MACT standards pursuant to this requirement. The CAA requires the U.S. EPA to promulgate regulations establishing emission standards for each category of Hazardous Air Pollutants. The U.S. EPA also must conduct risk assessments on each source category that is already subject to MACT standards and determine if additional standards are needed to reduce residual risks.

While our operations are subject to several different categories of NESHAP and MACT standards, the principal impact of these standards on U. S. Steel operations includes those that are specific to coke making, iron making, steel making and iron ore processing.

The U.S. EPA is currently in the process of completing a Residual Risk and Technology Review of the Integrated Iron and Steel MACT regulations, Coke MACT regulations, and Taconite Iron Ore Processing MACT regulations as required by the CAA. The U.S. EPA is under a court order to complete the Residual Risk and Technology Review of the Integrated Iron and Steel regulations no later than March 13, 2020; and to complete the Residual Risk and Technology Review of the Taconite Iron Ore Processing Regulations by June 30, 2020. Because the U.S. EPA has not completed its review, any impacts related to the U.S. EPA's review of these standards cannot be estimated at this time.

Table of Contents

On March 12, 2018, the New York State Department of Environmental Conservation (DEC) submitted a CAA Section 126 petition to the U.S. EPA. In the petition, the DEC asserts that stationary sources from the following nine states are interfering with attainment or maintenance of the 2008 and 2015 ozone National Ambient Air Quality Standards (NAAQS) in New York, Illinois, Indiana, Kentucky, Maryland, Michigan, Ohio, Pennsylvania, Virginia, and West Virginia. DEC is requesting the U.S. EPA to require sources of nitrogen oxides in the nine states to reduce such emissions. On May 4, 2018, citing Section 307(d)(10) of the CAA, the U.S. EPA issued a notice extending the deadline for the agency to respond to the petition until November 9, 2018. However, to date, U.S. EPA has not responded to the petition.

The CAA also requires the U.S. EPA to develop and implement NAAQS for criteria pollutants, which include, among others, particulate matter (PM) - consisting of PM10 and PM2.5, lead, carbon monoxide, nitrogen dioxide, SO_2, and ozone.

In June 2010, the U.S. EPA significantly lowered the primary NAAQS for SO_2 from 140 parts per billion (ppb) on a 24-hour basis to an hourly standard of 75 ppb. Subsequently, the U.S. EPA designated the areas in which Great Lakes Works and Mon Valley Works facilities are located as nonattainment with the 2010 standard for the SO_2 NAAQS. The non-attainment designation requires the facilities to implement operational and/or capital improvements to demonstrate attainment with the 2010 standard. U. S. Steel worked with the Allegheny County Health Department (ACHD) in developing a State Implementation Plan (SIP) for the Allegheny County portion of the Pennsylvania SIP that includes reductions of SO_2 and improved dispersion from U. S. Steel sources. On November 19, 2018, U.S. EPA published a proposed rule to approve the SIP. Comments on the proposed rule were accepted until December 19, 2018. In addition, as noted in the Legal Proceedings section, U. S. Steel continues to work with the regulatory authorities to address the Wayne County, Michigan (where Great Lakes Works is located) nonattainment status. The operational and financial impacts of the SO_2 NAAQS is not estimated to be material at this time.

In October 2015, the U.S. EPA lowered the NAAQS for ozone from 75 ppb to 70 ppb. On November 6, 2017, the U.S. EPA designated most areas in which we operate as attainment with the 2015 standard. In a separate ruling, on June 4, 2018, the U.S. EPA designated other areas in which we operate as “marginal nonattainment” with the 2015 ozone standard. While on December 6, 2018, U.S. EPA published a final rule regarding implementation of the 2015 ozone standard. Because no state regulatory or permitting actions to bring the ozone nonattainment areas into attainment have yet to be proposed or developed for U. S. Steel facilities, the operational and financial impact of the ozone NAAQS cannot be reasonably estimated at this time.

On December 14, 2012, the U.S. EPA lowered the annual standard for PM2.5 from 15 micrograms per cubic meter (ug/m3) to 12 ug/m3, and retained the PM2.5 24-hour and PM10 NAAQS rules. In December 2014, the U.S. EPA designated some areas in which U. S. Steel operates as nonattainment with the 2012 annual PM2.5 standard. On April 6, 2018, the U.S. EPA published a notice that Pennsylvania, California and Idaho failed to submit a SIP to demonstrate attainment with the 2012 fine particulate standard by the deadline established by the CAA. As a result of the notice, Pennsylvania, a state in which we operate, is required to submit a SIP to the U.S. EPA no later than November 7, 2019 to avoid sanctions. Because it is early in the SIP development stages, any impacts to U. S. Steel cannot be reasonably estimated at this time.

In 2010, the U.S. EPA retained the annual nitrogen dioxide NAAQS standard, but created a new 1-hour NAAQS and established new data reduction and monitoring requirements. While the U.S. EPA has classified all areas as being in attainment or unclassifiable, it is requiring implementation of a network of monitoring stations to assess air quality. Until the network is implemented and further designations are made, the impact on operations at U. S. Steel facilities cannot be reasonably estimated.

In July 2018, the ACHD provided U. S. Steel, ACHD Regulation Subcommittee members and interested parties with draft regulations that would modify the existing air regulations applicable to coke plants in Allegheny County. While ACHD currently has some of the most stringent air regulations in the country governing coke plants, which apply to U. S. Steel's coke plant in Clairton, Pennsylvania (the only remaining coke plant in Allegheny County and one of two remaining in Pennsylvania), the draft regulations would reduce the current allowable emissions from coke plant operations and would be more stringent than the Federal Best Available Control Technology and Lowest Achievable Emission Rate requirements. In various meetings with ACHD, U. S. Steel has raised significant objections, in particular, that ACHD has not demonstrated that continuous compliance with the draft rule is economically and technologically feasible. While U. S. Steel continues to meet with ACHD regarding the draft rule, U. S. Steel believes that any rule promulgated by ACHD must comply with their statutory authority. Adopting the draft rule or similar rule could be material to U. S. Steel.

Table of Contents

Environmental Remediation

In the United States, U. S. Steel has been identified as a potentially responsible party (PRP) at nine sites under CERCLA as of December 31, 2018. Of these, there are three sites where information requests have been received or there are other indications that U. S. Steel may be a PRP under CERCLA, but where sufficient information is not presently available to confirm the existence of liability or to make a reasonable estimate with respect to any potential liabilities. There are also 18 additional sites where U. S. Steel may be liable for remediation costs in excess of $100,000 under other environmental statutes, both federal and state, or where private parties are seeking to impose liability on U. S. Steel for remediation costs through discussions or litigation. At many of these sites, U. S. Steel is one of a number of parties involved and the total cost of remediation, as well as U. S. Steel’s share, is frequently dependent upon the outcome of ongoing investigations and remedial studies. U. S. Steel accrues for environmental remediation activities when the responsibility to remediate is probable and the amount of associated costs is reasonably estimable. As environmental remediation matters proceed toward ultimate resolution or as remediation obligations arise, charges in excess of those previously accrued may be required.

For further discussion of relevant environmental matters, see "Item 3. Legal Proceedings - Environmental Proceedings."

Property, Plant and Equipment Additions

For property, plant and equipment additions, including capital leases, see “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations – Financial Condition, Cash Flows and Liquidity – Cash Flows” and Note 13 to the Consolidated Financial Statements.

Employees

As of December 31, 2018, U. S. Steel had approximately 17,000 employees in the U.S. and approximately 12,000 in Europe.

Approximately 14,000 hourly employees of U. S. Steel’s flat-rolled, tubular, cokemaking and iron ore pellet facilities in the United States are covered by collective bargaining agreements with the USW effective September 1, 2018 (the 2018 Labor Agreements) that expire on September 1, 2022. The 2018 Labor Agreements provide for wage, pension and other benefit adjustments for current and future retirees. For more details on the 2018 Labor Agreements, see Note 28 to the Consolidated Financial Statements. A small number of workers at some of our North American facilities and at our transportation operations are covered by agreements with the USW or other unions that have various expiration dates.

In Europe, excluding U.S. expatriates, most employees at USSK are represented by the OZ KOVO union and all employees are covered by an agreement that expires at the end of March 2020.

Available Information

U. S. Steel’s Internet address is www.ussteel.com. We post our annual report on Form 10-K, our quarterly reports on Form 10-Q, our proxy statement and our interactive data files to our website as soon as reasonably practicable after such reports are filed with the Securities and Exchange Commission (SEC). We also post all press releases and earnings releases to our website.

All other filings with the SEC are available via a direct link on the U. S. Steel website to the SEC's website, www.sec.gov.

Also available on the U. S. Steel website are U. S. Steel's Corporate Governance Principles, Code of Ethical Business Conduct and the charters of the Audit Committee, the Compensation & Organization Committee and the Corporate Governance & Public Policy Committee of the Board of Directors. These documents and the Annual Report on Form 10-K and proxy statement are also available in print to any stockholder who requests them. Such requests should be sent to the Office of the Corporate Secretary, United States Steel Corporation, 600 Grant Street, Suite 1500, Pittsburgh, Pennsylvania 15219-2800 (telephone: 412-433-1121).

U. S. Steel does not incorporate into this document the contents of any website or the documents referred to in the immediately preceding paragraph.

Table of Contents

Other Information

Information on net sales, depreciation, capital expenditures, earnings (loss) before interest and income taxes and assets by reportable segment and for Other Businesses and on net sales and assets by geographic area are set forth in Note 4 to the Consolidated Financial Statements.

For significant operating data for U. S. Steel for each of the last five years, see "Five-Year Operating Summary (Unaudited)" within this document.

Table of Contents

Item 1A. RISK FACTORS

Operational Risk Factors

Our operational footprint, unplanned equipment outages and other unforeseen disruptions may adversely impact our results of operations.

U. S. Steel has adjusted its operating configuration in response to market conditions including global overcapacity and unfairly traded imports by idling and restarting production at certain facilities. Due to our operational footprint, the Company may not be able to respond in an efficient manner to fully realize the benefits from changing market conditions that are favorable to integrated steel producers.

Our steel production depends on the operation of critical structures and pieces of equipment, such as blast furnaces, steel shops, casters, hot strip mills and various structures and operations that support them. While we are implementing asset revitalization and a reliability-centered maintenance initiative focusing on proactive maintenance of key machinery and equipment at our production facilities, we may experience prolonged periods of reduced production and increased maintenance and repair costs due to equipment failures at our facilities or those of our key suppliers.

It is also possible that operations may be disrupted due to other unforeseen circumstances such as power outages, explosions, fires, floods, accidents, severe weather conditions, and changes in U.S., European Union and other foreign tariffs, free trade agreements, trade regulations, laws, and policies. We are also exposed to similar risks involving major customers and suppliers such as force majeure events of raw materials suppliers that have occurred and may occur in the future. Availability of raw materials and delivery of products to customers could be affected by logistical disruptions, such as shortages of barges, ocean vessels, rail cars or trucks, or unavailability of rail lines or of the locks on the Great Lakes or other bodies of water. To the extent that lost production could not be compensated for at unaffected facilities and depending on the length of the outage, our sales and our unit production costs could be adversely affected.

U. S. Steel continues to incur certain costs when production capacity is idled, increased costs to resume production at idled facilities, or costs to idle facilities.

Our decisions concerning which facilities to operate and at what levels are made based upon our customers’ orders for products as well as the capabilities and cost performance of our locations. During periods of depressed market conditions, we may concentrate production operations at several plant locations and not operate others in response to customer demand, and as a result we will incur idle facility costs.

When we restart idled facilities, we incur certain costs to replenish raw material inventories, prepare the previously idled facilities for operation, perform the required repair and maintenance activities and prepare employees to return to work safely and resume production responsibilities. The amount of any such costs can be material, depending on a variety of factors, such as the period of time during which the facilities remained idle, necessary repairs and available employees, and is difficult to project.

U. S. Steel has been and continues to be adversely affected by unfairly traded imports and global overcapacity, which may cause downward pricing pressure, lost sales and revenue, market share, decreased production, investment, and profitability.

Currently, global steel production capacity significantly exceeds global steel demand.

Global overcapacity continues to result in high levels of dumped and subsidized steel imports into the markets we serve. Domestic and international trade laws provide mechanisms to address the injury caused by such imports to domestic industries. Though U. S. Steel currently benefits from 54 U.S. antidumping and countervailing duty (AD/CVD) orders and 11 European Union (EU) AD/CVD orders, petitions for trade relief are not always successful or effective. When received, such relief is generally subject to periodic reviews and challenges, which can result in revocation of the AD/CVD order or reduction of the AD/CVD duties. There can be no assurance that any relief will be obtained or continued in the future or that such relief will adequately combat unfairly traded imports.

The current Section 232 national security tariffs and quotas on steel imports into the United States also provide U. S. Steel and other domestic steel producers relief from imports. Likewise, the EU's retaliatory 25 percent tariffs on certain U.S. steel imports and safeguard measures on steel provide USSE and other European steel producers relief

Table of Contents

from imports. The duration of the Section 232 tariffs and quotas, the outcome of outstanding product exclusion requests before the U.S. Department of Commerce, and the EU retaliatory and safeguard relief is not known.

Faced with significant imports into the U.S. and overcapacity in various markets, we will continue to evaluate potential strategic and organizational opportunities, which may include exiting lines of business and the sale of certain assets, temporary shutdowns or closures of facilities.

We face risks relating to changes in U.S. and foreign tariffs, trade agreements, laws, and policies

Through a series of Presidential Proclamations pursuant to Section 232 of the Trade Expansion Act of 1962, U.S. imports of certain steel products are subject to a 25 percent tariff, except for imports from: (1) Turkey, which are subject to a 50 percent tariff; (2) Argentina, Brazil, and Korea, which are subject to restrictive quotas; and (3) Australia, which is not subject to either tariffs or quotas. The Section 232 national security tariffs and quotas on steel imports currently provide U. S. Steel and other domestic steel producers critical relief from imports. With no scheduled end date, the duration of the Section 232 relief is not known. Further, the U.S. government may negotiate alternatives to the Section 232 tariffs for certain countries. The U.S. Department of Commerce continues to administer its Section 232 product exclusion process. The Section 232 action on aluminum and steel imports, potential Section 232 action on other products, and recent and potential additional U.S. import tariffs imposed under Section 301 of the Trade Act of 1974 have resulted in the possibility of tariffs being applied to materials and/or items we purchase from subject countries or regions as part of our manufacturing process, and may result in additional, retaliatory action by foreign governments on U.S. exports of a range of products, including products produced by our customers. In response to the Section 232 being applied to its exports, the European Commission imposed both 25 percent retaliatory tariffs on certain U.S. steel imports in June 2018 and a provisional safeguard on global steel imports in the form of tariff rate quotas (TRQs; 25 percent tariffs on steel imports that exceed the quota) in July 2018. The final EU safeguards are effective February 2019 through June 2021. All of the above factors present a degree of uncertainty to our financial and operational performance, our customers, and overall economic conditions, all of which could impact steel demand and our performance.

The steel industry is highly cyclical, which may have an adverse effect on our results of operations.

Steel consumption is highly cyclical and generally follows economic and industrial conditions both worldwide and in regional markets. This volatility makes it difficult to balance the procurement of raw materials and energy with global steel prices, our steel production and customer product demand. U. S. Steel has implemented strategic initiatives to produce more stable and consistent results, even during periods of economic and market downturns, but this may not be enough to mitigate the effect that the volatility inherent in the steel industry has on our results of operations.

We face increased competition from alternative materials and risks concerning innovation, new technologies, products and increasing customer requirements.

As a result of increasingly stringent regulatory requirements, designers, engineers and industrial manufacturers, especially those in the automotive industry, are increasing their use of lighter weight and alternative materials, such as aluminum, composites, plastics, and carbon fiber. Use of such materials could reduce the demand for steel products, which may reduce our profitability and cash flow.

Additionally, technologies such as direct iron reduction, EAF production, oxygen-coal injection and experimental technologies such as molten oxide electrolysis and hydrogen flash smelting may be more cost effective than our current production methods. However, we may not have sufficient capital to invest in such technologies and may incur difficulties adapting and fully integrating these technologies into our existing operations. We may also encounter production restrictions, or not realize the cost benefit from such capital intensive technology adaptations to our current

production processes. Customers, such as those in the automotive industry, are demanding stronger and lighter products. Tubular customers are increasingly requesting pipe producers to supply connections and other ancillary parts as well as inspection and other services. We may not be successful in meeting these technological challenges.

Limited availability of raw materials and energy may constrain operating levels and reduce profit margins.

U. S. Steel and other steel producers have periodically been faced with problems in obtaining sufficient raw materials and energy in a timely manner due to delays, defaults, severe weather conditions, or force majeure events by suppliers, shortages or transportation problems (such as shortages of barges, ore vessels, rail cars or trucks, or disruption of rail lines, waterways, or natural gas transmission lines), resulting in production curtailments. As a result, we may be

Table of Contents

exposed to risks concerning pricing and availability of raw materials from third parties. USSE purchases substantially all of its iron ore and coking coal requirements from outside sources. USSE is also dependent upon availability of natural gas produced in Russia and transported through Ukraine. Any curtailments or escalated costs may further reduce profit margins.

Changes in the global economic environment may lead to declines in the production levels of our customers.

We sell to the automotive, service center, converter, energy and appliance and construction-related industries. Some of these industries are cyclical and exhibit a great deal of sensitivity to general economic conditions. Low demand from customers in these key industries may adversely impact our financial position, results of operations and cash flows.

Our Flat-Rolled and Tubular segments may be particularly impacted by unfavorable market conditions in the oil and gas industries. Declines in oil prices, and the correlating reduction in drilling activity, as well as high levels of inventory in the supply chain, may reduce demand for tubular products and could have adverse impacts on our results of operations and cash flows.

We may be adversely impacted by volatility in prices for raw materials, energy, and steel.

U. S. Steel may be faced with having agreed to purchase raw materials and energy at prices that are above the current market price or in greater volumes than required. Additionally, any future decreases in iron ore, scrap, natural gas and oil prices may place downward pressure on steel prices. If steel prices decline, our profit margins on market-based indexed contracts and spot business will be reduced.

Our operations expose us to uncertainties and risks in the countries in which we operate, which may negatively affect our results of operations, cash flows and liquidity.

Our U.S. operations are subject to economic conditions, including credit and capital market conditions, and political factors in the United States, which if changed could negatively affect our results of operations, cash flows and liquidity. Political factors include, but are not limited to, taxation, inflation, increased regulation, limitations on exports of energy and raw materials, and trade remedies. Actions taken by the U.S. government could affect our results of operations, cash flows and liquidity.

USSE is subject to economic conditions and political factors associated with the EU, Slovakia and neighboring countries, and the euro currency. Changes in any of these economic conditions or political factors could negatively affect our results of operations, cash flows and liquidity. Political factors include, but are not limited to, taxation, nationalization, inflation, government instability, civil unrest, increased regulation and quotas, tariffs and other protectionist measures.

Our 2018 Labor Agreements with the USW contain provisions that may impact certain business activities.

Our 2018 Labor Agreements with the USW contain provisions that grant the USW a limited right to bid on the Company's sale of a facility (or sale of a controlling interest in an entity owning a facility) covered by the 2018 Labor Agreements, excluding public equity offerings and/or the transfer of assets between U. S. Steel wholly owned subsidiaries. These agreements also require a minimum level of capital expenditures (subject to approval of the Board of Directors) to maintain the competitive status of the covered facilities, and place certain restrictions on our ability to replace product produced at a covered facility with product produced at other than U.S. or Canadian facilities with employee protections similar to the protections found in the 2018 Labor Agreements when the Company is operating covered facilities below capacity. These provisions could favorably or unfavorably impact certain business activities including pricing, operating costs, margins, and/or our competitiveness in the marketplace.

A failure of our information technology infrastructure and cybersecurity threats may adversely affect our business operations.

Despite efforts to protect confidential business information, personal data of employees and contractors, and the control systems of manufacturing plants, U. S. Steel systems and those of our third-party service providers may be subject to cyber-attacks or system breaches. System breaches can lead to theft, unauthorized disclosure, modification or destruction of proprietary business data, personally identifiable information (PII), or other sensitive information, and to defective products, production downtime and damage to production assets, with a resulting impact to our reputation, competitiveness and operations. We have experienced cybersecurity attacks that have resulted in unauthorized persons gaining access to our information technology systems and networks, and we could in the future experience

Table of Contents

similar attacks. To date, no cybersecurity attack has had a material impact on our financial condition, results of operations or liquidity.
While the Company continually works to safeguard our systems and mitigate potential risks, there can be no assurance that such actions will be sufficient to prevent cyber-attacks or security breaches or mitigate all potential risks to our systems, networks and data. The potential consequences of a material cybersecurity attack include reputational damage, litigation with third parties, disruption to our systems, unauthorized release of confidential, personally identifiable, or otherwise protected information, corruption of data, diminution in the value of our investment in research, development and engineering, and increased cybersecurity protection and remediation costs, which in turn could adversely affect our competitiveness, results of operations and financial condition. The amount of insurance coverage we maintain may be inadequate to cover claims or liabilities resulting from a cybersecurity attack.

We depend on third parties for transportation services, and increases in costs or the availability of transportation may adversely affect our business and operations.

Our business depends on the transportation of a large number of products, both domestically and internationally. We rely primarily on third parties for transportation of the products we manufacture as well as delivery of our raw materials. Any increase in the cost of the transportation of our raw materials or products, as a result of increases in fuel or labor costs, higher demand for logistics services, consolidation in the transportation industry or otherwise, may adversely affect our results of operations as we may not be able to pass such cost increases on to our customers.

If any of these providers were to fail to deliver raw materials to us in a timely manner, we may be unable to manufacture and deliver our products in response to customer demand. In addition, if any of these third parties were to cease operations or cease doing business with us, we may be unable to replace them at a reasonable cost.

In addition, such failure of a third-party transportation provider could harm our reputation, negatively affect our customer relationships and have a material adverse effect on our financial position and results of operations.

Benefits from our stockholder value creation strategy and asset revitalization program may be limited or may not be fully realized.

U. S. Steel initiated a stockholder value creation strategy pursuant to which we focus on strengthening our balance sheet and cash flow generation. In 2018, we refreshed our corporate strategy to incorporate three critical success factors: winning in attractive markets, moving down the cost curve and moving up the talent curve. Our goal remains to deliver high-quality, value-added products on time every time and to collaborate with our customers to develop innovative solutions that address their most challenging needs. Additionally, in 2017 we implemented an asset revitalization program, which covers investments in our existing assets, and involves investments beyond routine capital and maintenance spending. These asset revitalization projects are expected to deliver both operational and commercial benefits, but such benefits may be limited to the assets that are revitalized. Business conditions, our ability to implement such initiatives, and factors beyond our control may limit the benefits associated with certain identified projects and limit the economic benefits of our stockholder value creation strategy or asset revitalization program.
We participate in joint ventures, which may not be successful.
We participate in a number of joint ventures and we may enter into additional joint ventures or other similar arrangements in the future. Our joint venture partners, as well as any future partners, may have interests that are different from ours which may result in conflicting views as to the conduct of the business of the joint venture. In the event that we have a disagreement with a joint venture partner as to the resolution of a particular issue, or as to the management or conduct of the business of the joint venture in general, we may not be able to resolve such disagreement in our favor. In addition, our joint venture partners may, as a result of financial or other difficulties or because of other reasons, be unable or unwilling to fulfill their obligations under the joint venture, such as

contributing capital to expansion or maintenance projects or approving dividends or other distributions or payments to us. Any significant downturn or deterioration in the business, financial condition or results of operations of a joint venture could adversely affect our results of operations in a particular period. There can be no assurance that our joint ventures will be beneficial to us.

Financial Risk Factors

Our business requires substantial expenditures for debt service obligations, capital investments, operating leases and maintenance that we may be unable to fund.

Table of Contents

While we have refinanced the near-term maturities of our long-term debt, we have approximately $2.4 billion of total debt (see Note 17 to the Consolidated Financial Statements). If our cash flows and capital resources are insufficient to fund our debt service obligations, we may face substantial liquidity problems and may be forced to reduce or delay investments and capital expenditures or to dispose of material assets or operations, or issue additional debt or equity. We may not be able to take such actions, if necessary, on commercially reasonable terms or at all. Our inability to generate sufficient cash flows to satisfy our debt obligations, or to refinance our indebtedness on commercially reasonable terms or at all, would materially and adversely affect our financial position and results or operations.

Our ability to service or refinance our debt or fund investments and capital expenditures required to maintain or expand our business operations depends on our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and to certain financial, business, legislative, regulatory and other factors beyond our control. We may not be able to maintain a level of cash flows from operating activities sufficient to permit us to satisfy our liquidity needs. In addition, the availability under our Fourth Amended and Restated Credit Agreement may be reduced if we have insufficient collateral, or if we do not meet a customary fixed charge coverage test. Availability under the USSK Credit Agreement could be limited if USSK does not meet certain financial covenants. See the Liquidity section in "Item 7. Management's Discussion and Analysis" and Note 17 to the Consolidated Financial Statements for further details.

We have significant retiree health care, retiree life insurance and pension plan costs, which may negatively affect our results of operations and cash flows.

We maintain retiree health care and life insurance and defined benefit pension plans covering many of our domestic employees and former employees upon their retirement. These benefit plans are not fully funded, and thus will require cash funding in future years. Minimum contributions to domestic qualified pension plans (other than contributions to the Steelworkers Pension Trust (SPT) described below) are regulated under the Employee Retirement Income Security Act of 1974 (ERISA) and the Pension Protection Act of 2006 (PPA).

The level of cash funding for our defined benefit pension plans in future years depends upon various factors, including voluntary contributions that we may make, future pension plan asset performance, actual interest rates under the law, and the impacts of business acquisitions or divestitures, union negotiated benefit changes and future government regulations, many of which are not within our control. In addition, assets held by the trusts for our pension plan and our trust for retiree health care and life insurance benefits are subject to the risks, uncertainties and variability of the financial markets. See "Item 7. Management's Discussion and Analysis" and Note 18 to the Consolidated Financial Statements for a discussion of assumptions and further information associated with these benefit plans.

U. S. Steel contributes to a domestic multiemployer defined benefit pension plan, the SPT, for USW-represented employees formerly employed by National Steel and represented employees hired after May 2003. We have legal requirements for future funding of this plan should the SPT become significantly underfunded or we decide to withdraw from the plan. Either of these scenarios may negatively impact our future cash flows. The 2018 Labor Agreements increased the contribution rate for most steelworker employees. Collectively bargained company contributions to the plan could increase further as a result of future changes agreed to by the Company and the USW.

Rating agencies may downgrade our credit ratings, which would make it more difficult for us to raise capital and would increase our financing costs.

Any downgrades in our credit ratings may make raising capital more difficult, may increase the cost and adversely affect the terms of future borrowings, may adversely affect the terms under which we purchase goods and services and may limit our ability to take advantage of potential business opportunities.

We are subject to foreign currency risks, which may negatively impact our profitability and cash flows.

The financial condition and results of operations of USSE are reported in euros and then translated into U.S. dollars at the applicable exchange rate for inclusion in our financial statements. The appreciation of the U.S. dollar against the euro negatively affects our Consolidated Results of Operations. International cash requirements have been and in the future may be funded by intercompany loans, which may create intercompany monetary assets and liabilities in currencies other than the functional currencies of the entities involved, which can have a non-cash impact on income when they are remeasured at the end of each period.

Table of Contents

In addition, foreign producers, including foreign producers of subsidized or unfairly traded steel with foreign currency denominated costs may gain additional competitive advantages or target our home markets if the U.S. dollar or euro exchange rates strengthen relative to those producers' currencies.

Financial regulatory frameworks introduced by U.S. and EU regulators may limit our financial flexibility or increase our costs.

The Commodity Future Trading Commission’s Dodd Frank and the EU’s European Market Infrastructure Regulation regulatory frameworks can limit the Company’s ability to hedge interest rate, foreign exchange (FX), or commodity pricing exposures, which could expose us to increased economic risk. These frameworks may introduce additional compliance costs or liquidity requirements. Some counterparties may cease hedging as a result of increased regulatory cost burdens, which in turn may reduce U. S. Steel’s ability to hedge its interest rate, FX, or commodity exposures.

We may be subject to legal proceedings or investigations, the resolution of which could negatively affect our profitability and cash flows in a particular period.

We may be involved at any given time in various litigation matters, including administrative and regulatory proceedings, governmental investigations, environmental matters, and commercial disputes. Our profitability and cash flows in a particular period could be negatively affected by an adverse ruling in any legal proceeding or investigation that may be pending against us or filed against us in the future. While we believe that we have taken appropriate actions to mitigate and reduce these risks, due to the nature of our operations, these risks will continue to exist and additional legal proceedings or investigations may arise from time to time.

Additionally, we may be subject to product liability claims that may have an adverse effect on our financial position, results of operations and cash flows. Events such as well failures, line pipe leaks, blowouts, bursts, fires and product recalls could result in claims that our products or services were defective and caused death, personal injury, property damage or environmental pollution. The insurance we maintain may not be adequate, available to protect us in the event of a claim, or its coverage may be limited, canceled or otherwise terminated, or the amount of our insurance may be less than the related impact on our enterprise value after a loss.

Regulatory Risk Factors

Compliance with existing and new environmental regulations, environmental permitting and approval requirements may result in delays or other adverse impacts on planned projects, our results of operations and cash flows.

Steel producers in the United States, along with their customers and suppliers, are subject to numerous federal, state and local laws and regulations relating to the protection of the environment. These laws and regulations concern the generation, storage, transportation, disposal, emission or discharge of pollutants, contaminants, hazardous substances and greenhouse gases into the environment, the reporting of such matters, and the general protection of public health and safety, natural resources, wildlife and the environment. Steel producers in the EU are subject to similar laws. These laws continue to evolve and are becoming increasingly stringent. The ultimate impact of complying with such laws and regulations is not always clearly known or determinable because regulations under some of these laws have not yet been promulgated or are undergoing revision. Additionally, compliance with certain of these laws and regulations, such as the CAA and similar state and local requirements, governing GHG, SO_2 and other emissions, could result in substantially increased capital requirements and operating costs. Compliance with current or future regulations could entail substantial costs for emission based systems, and could have a negative impact on our results of operations and cash flows. Failure to comply with the requirements may result in administrative, civil and criminal penalties, revocation of permits to conduct business or construct certain facilities, substantial fines or sanctions, enforcement actions (including orders limiting our operations or requiring corrective measures), natural resource

damages claims, cleanup and closure costs, and third-party claims for property damage and personal injury as a result of violations of, or liabilities under, environmental laws, regulations, codes and common law. The amount and timing of environmental expenditures is difficult to predict, and, in some cases, liability may be imposed without regard to contribution or to whether we knew of, or caused, the release of hazardous substances.

In addition, the Company must obtain, maintain and comply with numerous permits, leases, approvals, consents and certificates from various governmental authorities in connection with the construction and operation of new production facilities or modifications to existing facilities. In connection with such activities, the Company may need to make significant capital and operating expenditures to detect, repair and/or control air emissions, to control water

discharges or to perform certain corrective actions to meet the conditions of the permits issued pursuant to applicable environmental laws and regulations.

There can be no assurance that future approvals, licenses and permits will be granted or that we will be able to maintain and renew the approvals, licenses and permits we currently hold. Failure to do so could have a material adverse effect on our results of operations and cash flows. Furthermore, compliance with the environmental permitting and approval requirements may be costly and time consuming and could result in delays or other adverse impacts on planned projects, our results of operations and cash flows.

We have significant environmental remediation costs that may negatively affect our results of operations and cash flows.

Some of U. S. Steel's current and former facilities were in operation before 1900. Hazardous materials associated with those facilities may have been released at current or former operating sites or delivered to sites operated by third parties.

U. S. Steel is involved in numerous remediation projects at currently operating facilities, facilities that have been closed or sold to unrelated parties and other sites where material generated by U. S. Steel was deposited. In addition, there are numerous other former operating or disposal sites that could become the subject of remediation, which may negatively affect our results of operations and cash flows.

Our activities are subject to complex regulatory and compliance frameworks.

The need to comply with complex foreign and U.S. laws and regulations that apply to our international activities, including, but not limited to, U.S. laws such as the Foreign Corrupt Practices Act, economic sanctions, and other import and export laws and regulations, may increase our cost of doing business and expose the Company and its employees to elevated risk. The Company's subsidiaries and joint ventures may face similar risks. Although we have implemented policies and processes designed to comply with these laws and regulations, failure by our employees, contractors, or agents to comply with these laws and regulations can result in possible administrative, civil, or criminal liability, as well as reputational harm to the Company and its employees.

The IRS may disallow all or part of a worthless stock loss and bad debt deduction taken in 2013.

U. S. Steel made an election effective December 31, 2013 to liquidate for U.S. income tax purposes a foreign subsidiary that holds most of the Company’s international operations. The tax liquidation allowed the Company to claim a worthless stock loss and bad debt deduction in its 2013 U.S. income tax return, resulting in a net income tax benefit in 2013 of $419 million. In 2015, the IRS began its audit of the worthless stock loss and bad debt deduction taken in 2013. The audit is subject to finalization and possible adjustment by the IRS, which could result in the reversal of all or part of the income tax benefit from the worthless stock/bad debt deduction.

Changes to global data privacy laws and cross-border transfer requirements could adversely affect our business and operations.

Our business depends on the transfer of data between our affiliated entities, to and from our business partners, and with third-party service providers, which may be subject to global data privacy laws and cross-border transfer restrictions. While U. S. Steel takes steps to comply with these legal requirements, the volatility and changes to the applicability of those laws, as well as evolving standards and judicial and regulatory interpretations of such laws, may impact U. S. Steel’s ability to effectively transfer data across borders in support of our business operations and/or keep pace with specific requirements regarding safeguarding personal information and lead to possible administrative, civil,

or criminal liability, as well as reputational harm to the Company and its employees. For example, the European Union's General Data Protection Regulation (GDPR), which went into effect in May 2018, created a range of new compliance obligations for subject companies and increases financial penalties for non-compliance. The costs of compliance with the GDPR and the potential for fines and penalties in the event of a breach of the GDPR may have an adverse effect on our business and operations.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Table of Contents

Item 2. PROPERTIES

The following tables list U. S. Steel’s main properties, their locations and their products and services:
North American Operations

Property	Location	Products and Services
Gary Works	Gary, Indiana	Slabs; Sheets; Tin mill; Strip mill plate
Midwest Plant	Portage, Indiana	Sheets; Tin mill
East Chicago Tin	East Chicago, Indiana	Sheets; Tin mill
Great Lakes Works	Ecorse and River Rouge, Michigan	Slabs; Sheets
Great Lakes Works EGL at Dearborn	Dearborn, Michigan	Galvanized sheets
Mon Valley Works		
Irvin Plant	West Mifflin, Pennsylvania	Sheets
Edgar Thomson Plant	Braddock, Pennsylvania	Slabs
Fairless Plant	Fairless Hills, Pennsylvania	Galvanized sheets
Clairton Plant	Clairton, Pennsylvania	Coke
Granite City Works[(a)]	Granite City, Illinois	Slabs; Sheets
Southern Coatings		
Fairfield Sheet	Fairfield, Alabama	Galvanized Sheets
Double G Coatings Company, L.P.[(b)]	Jackson, Mississippi	Galvanized and Galvalume® sheets
USS-POSCO Industries[(b)]	Pittsburg, California	Sheets; Tin mill
PRO-TEC Coating Company[(b)]	Leipsic, Ohio	Galvanized and high strength annealed sheets
Fairfield Tubular Operations	Fairfield, Alabama	Seamless Tubular Pipe
Worthington Specialty Processing[(b)]	Jackson, Canton and Taylor, Michigan	Steel processing
Feralloy Processing Company[(b)]	Portage, Indiana	Steel processing
Chrome Deposit Corporation[(b)]	Various	Roll processing
Lorain Tubular Operations	Lorain, Ohio	Seamless Tubular Pipe
Lone Star Tubular	Lone Star, Texas	Welded Tubular Pipe
Wheeling Machine Products	Pine Bluff, Arkansas and Hughes Springs, Texas	Tubular couplings
Tubular Processing[(c)]	Houston, Texas	Tubular processing
Offshore Operations	Houston, Texas	Tubular threading, inspection, accessories and storage services and premium connections
Patriot Premium Threading Services[(b)]	Midland, Texas	Tubular threading, accessories and premium connections
Minntac Iron Ore Operations	Mt. Iron, Minnesota	Iron ore pellets
Keetac Iron Ore Operations	Keewatin, Minnesota	Iron ore pellets
Hibbing Taconite Company[(b)]	Hibbing, Minnesota	Iron ore pellets

Transtar, LLC	Alabama, Indiana, Michigan, Ohio, Pennsylvania, Texas	Railroad operations

(a) Hot end idled in 2015, restarted in the 2nd quarter of 2018
(b) Equity investee
(c) Temporarily Idled

Table of Contents

European Operations

Property	Location	Products and Services
U. S. Steel Košice	Košice, Slovakia	Slabs; Sheets; Tin mill; Strip mill plate; Tubular; Coke; Radiators; Refractories

U. S. Steel and its predecessors (including Lone Star) have owned their properties for many years with no material adverse title claims asserted. In the case of Great Lakes Works, Granite City Works, the Midwest Plant and Keetac iron ore operations, U. S. Steel or its subsidiaries are the beneficiaries of bankruptcy laws and orders providing that properties are held free and clear of past liens and liabilities. In addition, U. S. Steel or its predecessors obtained title insurance, local counsel opinions or similar protections when significant properties were initially acquired or since acquisition.

At the Midwest Plant in Indiana, U. S. Steel has a supply agreement for various utility services with a company that owns a cogeneration facility located on U. S. Steel property. The Midwest Plant agreement expires in 2028.

U. S. Steel leases its headquarters office space in Pittsburgh, Pennsylvania.

For property, plant and equipment additions, including capital leases, see “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations – Financial Condition, Cash Flows and Liquidity – Cash Flows” and Note 13 to the Consolidated Financial Statements.

Item 3. LEGAL PROCEEDINGS

U. S. Steel is the subject of, or a party to, a number of threatened or pending legal actions, contingencies and commitments involving a variety of matters, including laws and regulations relating to the environment, certain of which are discussed in Note 26 to the Consolidated Financial Statements. The ultimate resolution of these contingencies could, individually or in the aggregate, be material to the U. S. Steel financial statements. However, management believes that U. S. Steel will remain a viable and competitive enterprise even though it is possible that these contingencies could be resolved unfavorably to U. S. Steel.

General Litigation

On April 11, 2017, there was a process waste water release at our Midwest Plant (Midwest) in Portage, Indiana that impacted a water outfall that discharges to Burns Waterway near Lake Michigan. U. S. Steel identified the source of the release and made the necessary repairs. We determined that all repairs were safely working as intended and, on April 14, 2017, resumed operations in a controlled, phased and highly monitored approach with extensive input from participating government agencies. The Company has since implemented substantial operational, process and notification improvements at Midwest. The Company has been presented with cost reimbursements, loss of use and penalty requests from the involved governmental agencies. In January of 2018, The Surfrider Foundation and the City of Chicago initiated suits in the Northern District of Indiana alleging CWA and Permit violations at Midwest. On April 2, 2018, the U.S. EPA and the State of Indiana initiated a separate action against the Company and lodged a Consent Decree negotiated between U. S. Steel and the relevant governmental agencies consisting of all material terms to resolve the CWA and NPDES violations at the Midwest Plant. A public comment period for the Consent Decree ensued. U. S. Steel, U.S. EPA and the State of Indiana continue the process of reviewing and addressing those comments. The Surfrider Foundation and the City of Chicago initially agreed to stay their actions pending finalization of the Consent Decree, but filed a motion to lift that stay in July 2018. On September 13, 2018, both The Surfrider Foundation and the City of Chicago filed motions to intervene in the Consent Decree case. On December 6, 2018, the Court denied the Surfrider Foundation and City of Chicago's motion to lift the stay in the citizen suit case, and on December 13, 2018 the court granted the Surfrider Foundation and City of Chicago's motion to intervene in the Consent Decree case. The citizens groups filed their Complaints-in-Intervention on December 27, 2018, and Amended Complaints-in-Intervention on January 17, 2019. U. S. Steel continues to work with United States Department of Justice, U.S. EPA, and Indiana Department of Environmental Management towards a finalized Consent Decree.
On November 30, 2018, the Minnesota Pollution Control Agency (MPCA) issued a new Water Discharge Permit for the Minntac Tailings Basin waters. The Permit contains new sulfate limitations applicable to water in the Tailings Basin and groundwater flowing from U. S. Steel's property. The MPCA also acted on the same date, denying the Company's requests for variances from ground and surface water standards and request for a contested case hearing. U. S. Steel filed appeals on December 19, 2018 challenging the actions taken by the MPCA. Separate appeals have been filed by a Minnesota Native American Tribe (Fond du Lac Band) and a nonprofit environmental group (Water Legacy). U. S. Steel has filed Petitions to Intervene in both cases.
On October 2, 2017, an Amended Shareholder Class Action Complaint was filed in Federal Court in the Western District of Pennsylvania consolidating previously-filed actions. Separately, four related shareholder derivative lawsuits were filed in State and Federal courts in Pittsburgh, Pennsylvania. The underlying consolidated class action lawsuit alleges that U. S. Steel, certain current and former officers, an upper level manager of the Company and the financial underwriters who participated in the August 2016 secondary public offering of the Company's common stock (collectively, Defendants) violated federal securities laws in making false statements and/or failing to discover and disclose material information regarding the financial condition of the Company. The lawsuit claims that this conduct caused a prospective class of plaintiffs to sustain damages during the period from January 27, 2016 to April 25, 2017 as a result of the prospective class purchasing the Company's common stock at artificially inflated prices and/or suffering losses when the price of the common stock dropped. The derivative lawsuits generally make the same

allegations against the same officers and also allege that certain current and former members of the Board of Directors failed to exercise appropriate control and oversight over the Company and were unjustly compensated. The plaintiffs seek to recover losses that were allegedly sustained. The class action Defendants moved to dismiss plaintiffs' claims. On September 29, 2018 the Court ruled on those motions granting them in part and denying them in part. The Company is vigorously defending the remaining claims.

Table of Contents

Asbestos Litigation

As of December 31, 2018, U. S. Steel was a defendant in approximately 755 active cases involving approximately 2,320 plaintiffs. The vast majority of these cases involve multiple defendants. About 1,540, or approximately 66 percent, of these plaintiff claims are currently pending in jurisdictions which permit filings with massive numbers of plaintiffs. As of December 31, 2017, U. S. Steel was a defendant in approximately 820 cases involving approximately 3,315 plaintiffs. Based upon U. S. Steel's experience in such cases, it believes that the actual number of plaintiffs who ultimately assert claims against U. S. Steel will likely be a small fraction of the total number of plaintiffs.

The following table shows the activity with respect to asbestos litigation:

Period ended	Opening Number of Claims	Claims Dismissed, Settled and Resolved (a)	New Claims	Closing Number of Claims
December 31, 2016	3,315	225	250	3,340
December 31, 2017	3,340	275	250	3,315
December 31, 2018	3,315	1,285	290	2,320

(a) The period ending December 31, 2018 includes approximately 1,000 dismissed cases previously pending in the State of Texas.

Historically, asbestos-related claims against U. S. Steel fall into three groups: (1) claims made by persons who allegedly were exposed to asbestos on the premises of U. S. Steel facilities; (2) claims made by persons allegedly exposed to products manufactured by U. S. Steel; and (3) claims made under certain federal and maritime laws by employees of former operations of U. S. Steel.

The amount U. S. Steel accrues for pending asbestos claims is not material to U. S. Steel's financial condition. However, U. S. Steel is unable to estimate the ultimate outcome of asbestos-related claims due to a number of uncertainties, including: (1) the rates at which new claims are filed, (2) the number of and effect of bankruptcies of other companies traditionally defending asbestos claims, (3) uncertainties associated with the variations in the litigation process from jurisdiction to jurisdiction, (4) uncertainties regarding the facts, circumstances and disease process with each claim, and (5) any new legislation enacted to address asbestos-related claims.

Further, U. S. Steel does not believe that an accrual for unasserted claims is required. At any given reporting date, it is probable that there are unasserted claims that will be filed against the Company in the future. In the current year, the Company engaged an outside valuation consultant to assist in assessing its ability to estimate an accrual for unasserted claims. This assessment was based on the Company's settlement experience, including recent claims trends. The analysis focused on settlements made over the last several years as these claims are likely to best represent future claim characteristics. After review by the valuation consultant and U. S. Steel management, it was determined that the Company could not estimate an accrual for unasserted claims.

Despite these uncertainties, management believes that the ultimate resolution of these matters will not have a material adverse effect on U. S. Steel's financial condition.

ENVIRONMENTAL PROCEEDINGS

The following is a summary of the proceedings of U. S. Steel that were pending or contemplated as of December 31, 2018, under federal and state environmental laws. Information about specific sites where U. S. Steel is or has been engaged in significant clean up or remediation activities is also summarized below. Except as described herein, it is not possible to accurately predict the ultimate outcome of these matters.

CERCLA Remediation Sites

Claims under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) have been raised with respect to the cleanup of various waste disposal and other sites. Under CERCLA, potentially responsible parties (PRPs) for a site include current owners and operators, past owners and operators at the time of disposal, persons who arranged for disposal of a hazardous substance at a site, and persons who transported a hazardous

Table of Contents

substance to a site. CERCLA imposes strict and joint and several liabilities. Because of various factors, including the ambiguity of the regulations, the difficulty of identifying the responsible parties for any particular site, the complexity of determining the relative liability among them, the uncertainty as to the most desirable remediation techniques, and the amount of damages and cleanup costs and the time period during which such costs may be incurred, we are unable to reasonably estimate U. S. Steel's ultimate liabilities under CERCLA.

As of December 31, 2018, U. S. Steel has received information requests or been identified as a PRP at a total of nine CERCLA sites, three of which have liabilities that have not been resolved. Based on currently available information, which is in many cases preliminary and incomplete, management believes that U. S. Steel's liability for CERCLA cleanup and remediation costs at the other six sites will be between $100,000 and $1 million for five of the sites, and over $5 million for one site as described below.

Duluth Works

The former U. S. Steel Duluth Works site was placed on the National Priorities List under CERCLA in 1983 and on the State of Minnesota's Superfund list in 1984. Liability for environmental remediation at the site is governed by a Response Order by Consent executed with the MPCA in 1985 and a Record of Decision signed by MPCA in 1989. U. S. Steel has partnered with the Great Lakes National Program Office (GLNPO) of U.S. EPA Region 5 to address contaminated sediments in the St. Louis River Estuary and several other Operable Units that could impact the Estuary if not addressed. An amendment to the Project Agreement between U. S. Steel and GLNPO was executed during the second quarter of 2018 to recognize the costs associated with implementing the proposed remedial plan at the site.

While work continues on completion of the remedial design and educating the public and key stakeholders on the details of the plan, there has been no material change in the status of the project during the twelve months ended December 31, 2018. Additional study, investigation, design, oversight costs, and implementation of U. S. Steel's preferred remedial alternatives on the upland property and Estuary are currently estimated as of December 31, 2018 at approximately $46 million.

RCRA and Other Remediation Sites

U. S. Steel may be liable for remediation costs under other environmental statutes, both federal and state, or where private parties are seeking to impose liability on U. S. Steel for remediation costs through discussions or litigation. There are 18 such sites where remediation is being sought involving amounts in excess of $100,000. Based on currently available information, which is in many cases preliminary and incomplete, management believes that liability for cleanup and remediation costs in connection with eight sites have potential costs between $100,000 and $1 million per site, five sites may involve remediation costs between $1 million and $5 million per site and five sites are estimated to or could have, costs for remediation, investigation, restoration or compensation in excess of $5 million per site.

For more information on the status of remediation activities at U. S. Steel's significant sites, see the discussions related to each site below.

Gary Works

On October 23, 1998, the U.S. EPA issued a final Administrative Order on Consent (Order) addressing Corrective Action for Solid Waste Management Units (SWMU) throughout Gary Works. This Order requires U. S. Steel to perform a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI), a Corrective Measures Study (CMS) and Corrective Measure Implementation. While work continues on several items, there has been no material change in the status of the project during the twelve months ended December 31, 2018. Until the remaining

Phase I work and Phase II field investigations are completed, it is not possible to assess what additional expenditures will be necessary for Corrective Action projects at Gary Works. In total, the accrued liability for Corrective Action projects is approximately $25 million as of December 31, 2018, based on our current estimate of known remaining costs.

Geneva Works

At U. S. Steel's former Geneva Works, liability for environmental remediation, including the closure of three hazardous waste impoundments and facility-wide corrective action, has been allocated between U. S. Steel and the current property owner pursuant to an agreement and a permit issued by the Utah Department of Environmental Quality (UDEQ). Having completed the investigation on a majority of the remaining areas identified in the permit, U. S. Steel has determined the most effective means to address the remaining impacted material is to manage those materials

in a previously approved on-site Corrective Action Management Unit (CAMU). U. S. Steel awarded a contract for the implementation of the CAMU project during the fourth quarter of 2018 and submitted the first of several design documents to UDEQ for approval. Construction, waste stabilization and placement and closure of the CAMU are expected to be complete in 2020. U. S. Steel has an accrued liability of approximately $62 million as of December 31, 2018, for our estimated share of the remaining costs of remediation.

USS-POSCO Industries (UPI)

A joint venture in Pittsburg, California between subsidiaries of U. S. Steel and POSCO, UPI's facilities were previously owned and operated solely by U. S. Steel which retains primary responsibility for the existing environmental conditions. Work continues to monitor the impacts of the remedial plan implemented in 2016 to address groundwater impacts from trichloroethylene at SWMU 4. Evaluations continue for the three SWMUs known as the Northern Boundary Group and it is likely that corrective measures will be required, but it is not possible at this time to define a scope or estimate costs for what may be required by the California Department of Toxic Substances Control. As such, there has been no material change in the status of the project during the twelve months ended December 31, 2018. As of December 31, 2018, approximately $1 million has been accrued for ongoing environmental studies, investigations and remedy monitoring. Significant additional costs associated with this site are possible and are referenced in Note 26 to the Consolidated Financial Statements “Contingencies and Commitments - Environmental Matters - Remediation Projects - Projects with Ongoing Study and Scope Development.”

Fairfield Works

A consent decree was signed by U. S. Steel, the U.S. EPA and the U.S. Department of Justice and filed with the United States District Court for the Northern District of Alabama (United States of America v. USX Corporation) in December 1997. In accordance with the consent decree, U. S. Steel initiated a RCRA corrective action program at the Fairfield Works facility. The Alabama Department of Environmental Management, with the approval of the U.S. EPA, assumed primary responsibility for regulation and oversight of the RCRA corrective action program at Fairfield Works. While work continues on different aspects of the program, there has been no material change in the status of the project during the twelve months ended December 31, 2018. In total, the accrued liability for remaining work under the Corrective Action Program, was approximately $133,000 at December 31, 2018. Significant additional costs associated with this site are possible and are referenced in Note 26 to the Consolidated Financial Statements “Contingencies and Commitments - Environmental Matters - Remediation Projects - Projects with Ongoing Study and Scope Development.”

Fairless Plant

In April 1993, U. S. Steel entered into a consent order with the U.S. EPA pursuant to RCRA, under which U. S. Steel would perform Interim Measures (IM), an RFI and CMS at our Fairless Plant. A Phase I RFI Final Report was submitted in September of 1997. With U.S. EPA’s agreement, in lieu of conducting subsequent phases of the RFI and the CMS, U. S. Steel has been working through the Pennsylvania Department of Environmental Protection Act 2 Program to characterize and remediate facility parcels for redevelopment. While work continues on these items, there has been no material change in the status of the project during the twelve months ended December 31, 2018. As of December 31, 2018, the accrued liability to maintain the interim measures, and clear properties through the Act 2 process is approximately $90,000. Significant additional costs associated with this site are possible and are referenced in Note 26 to the Consolidated Financial Statements “Contingencies and Commitments - Environmental Matters - Remediation Projects - Projects with Ongoing Study and Scope Development.”

Lorain Tubular Operations

In September 2006, U. S. Steel and the Ohio Environmental Protection Agency (OEPA) commenced discussions about RCRA Corrective Action at Lorain Tubular Operations. A Phase I RFI on the identified SWMUs and Areas of Contamination was submitted in March 2012. While discussions continue with OEPA on drafting the Statement of Basis identifying potential remedies to address areas documented in the Phase II RFI, there has been no material change in the status of the project during the twelve months ended December 31, 2018. As of December 31, 2018, costs to complete additional projects are estimated to be approximately $94,000. Significant additional costs associated with this site are possible and are referenced in Note 26 to the Consolidated Financial Statements "Contingencies and Commitments - Environmental Matters - Remediation Projects - Projects with Ongoing Study and Scope Development."

Table of Contents

Joliet Works

The 50-acre parcel at the former Joliet Works is enrolled in the Illinois Environmental Protection Agency's (IEPA) voluntary Site Remediation Program (the Program). The Program requires investigation and establishment of cleanup objectives followed by submission/approval of a Remedial Action Plan to meet those objectives. The 50-acre parcel was divided into four subareas with remedial activities completed in 2015 for three of the subareas. While work continues to define the requirements for further investigation of the remaining subarea, there has been no material change in the status of the project during the twelve months ended December 31, 2018. U. S. Steel has an accrued liability of $287,000 related to this matter as of December 31, 2018. Significant additional costs associated with this site are possible and are referenced in Note 26 to the Consolidated Financial Statements "Contingencies and Commitments - Environmental Matters - Remediation Projects - Projects with Ongoing Study and Scope Development."

Cherryvale (KS) Zinc

In April 2003, U. S. Steel and Salomon Smith Barney Holdings, Inc. (SSB) entered into a Consent Order with the Kansas Department of Health & Environment (KDHE) concerning a former zinc smelting operation in Cherryvale, Kansas. Remediation of the site proper was essentially completed in 2007. The Consent Order was amended on May 3, 2013, to require investigation (but not remediation) of potential contamination beyond the boundary of the former zinc smelting operation. On November 22, 2016, KDHE approved a State Cooperative Final Agency Decision Statement that identified the remedy selected to address potential contamination beyond the boundary of the former zinc smelting site. The Removal Action Design Plan was approved during the second quarter of 2018. The Waste Deposition Area design and the Interim Risk Management Plan (which includes institutional controls) were approved by KDHE during the fourth quarter of 2018. Negotiations of an amended consent order for remediation commenced in December 2018. U. S. Steel has an accrued liability of approximately $11 million as of December 31, 2018, for our estimated share of the cost of remediation.

South Works

On August 29, 2017, U. S. Steel was notified by the U.S. Coast Guard of a sheen on the water in the North Vessel Slip at our former South Works in Chicago, Illinois. U. S. Steel has been working with the IEPA under their voluntary Site Remediation Program since 1993 to evaluate the condition of the property including the North Vessel Slip. The result of this cooperative effort has been the issuance of a series of "No Further Remediation" (NFR) notices to U. S. Steel including one specific to the North Vessel Slip. U. S. Steel has notified the IEPA of the potential changed condition and is working closely with the IEPA and the U. S. Coast Guard to determine the source of the sheen and options to address the issue. U. S. Steel has an accrued liability of $24,000 as of December 31, 2018.

Air Related Matters

Gary Works

In November 2018, the Indiana Department of Environmental Management (IDEM) advised U. S. Steel that it intends to address certain deviations from the Gary Works Title V Permit that were to have occurred in late 2017 and the first three quarters of 2018 in an enforcement action that it anticipates would be resolved through an Agreed Order. IDEM indicated that it intends to address the following issues in the action: intermittent exceedances of opacity standards at the steel producing roof monitor; deviations from certain miscellaneous inspection requirements; exceedance of the hydrochloric acid limit at the pickle line (which U. S. Steel has since demonstrated compliance); and exceedance of the particulate matter limit at the iron pellet screeners. Generally, the deviations were self-disclosed by U. S. Steel in reports submitted to IDEM. U. S. Steel is currently working with IDEM to resolve the issues.

Great Lakes Works

In June 2010, the U.S. EPA significantly lowered the primary NAAQS for SO_2 from 140 ppb on a 24-hour basis to an hourly standard of 75 ppb. Based upon the 2009-2011 ambient air monitoring data, the U.S. EPA designated the area in which Great Lakes Works is located as nonattainment with the 2010 SO_2 NAAQS.

As a result, pursuant to the CAA, the Michigan Department of Environmental Quality (MDEQ) was required to submit a SIP to the U.S. EPA that demonstrates that the entire nonattainment area (and not just the monitor) would be in attainment by October 2018 by using conservative air dispersion modeling. To develop the SIP, U. S. Steel met with

56

Table of Contents

MDEQ on multiple occasions and had offered reduction plans to MDEQ but the parties could not agree to a plan. MDEQ, instead promulgated Rule 430 which was solely directed at U. S. Steel. The Company challenged Rule 430 before the Michigan Court of Claims who by Order dated October 4, 2017, granted the Company's motion for summary disposition voiding Rule 430 finding that it violated rule-making provisions of the Michigan Administrative Procedures Act and Michigan Constitution. Since Rule 430 has been invalidated and MDEQ's SIP has not been approved, U.S. EPA has indicated that it would promulgate a Federal Implementation Plan (FIP) pursuant to its obligations and authority under the Clean Air Act (CAA). Because development of the FIP is in the early stages, the impacts of the nonattainment designation to the Company are not estimable at this time.

On November 21, 2018, MDEQ issued a Violation Notice to U. S. Steel in which MDEQ alleges that U. S. Steel intermittently exceeded the applicable opacity limit at D4 Blast Furnace Slag Pit on July 26, 2018. In addition, in the notice, MDEQ alleges that U. S. Steel intermittently violated the applicable opacity standard at the D4 Blast Furnace backdraft stack on July 30, 2018. On December 19, 2018, U. S. Steel responded to the violation notice. While no penalty has been assessed to date, U. S. Steel met with MDEQ on January 17, 2019 to discuss resolution of the matter. MDEQ and U. S. Steel continue to discuss resolution of the matter.

On October 12, 2018, MDEQ issued a Violation Notice to U. S. Steel in which MDEQ alleges that U. S. Steel violated the applicable opacity standard at the B2 Blast Furnace backdraft stack intermittently on September 16, 2018. In addition, in the notice, MDEQ alleges that U. S. Steel intermittently violated the Basic Oxygen Furnace roof monitor opacity standard on September 19, 2018. U. S. Steel responded to the notice on November 2, 2018 and provided MDEQ with actions taken. While no penalty has been assessed to date, U. S. Steel met with MDEQ on January 17, 2019 to discuss resolution of the matter. MDEQ and U. S. Steel continue to discuss resolution of the matter.

On October 8, 2018, U. S. Steel received a Violation Notice from MDEQ in which MDEQ alleges that U. S. Steel exceeded applicable limits at the pickle line based upon the results of a stack test conducted in April 2018. On October 26, 2018, U. S. Steel responded to the notice and provided MDEQ with more recent test results at the pickle line that demonstrate compliance with the applicable limit. While no penalty has been assessed to date, U. S. Steel met with MDEQ on January 17, 2019 to discuss resolution of the violation notice. MDEQ and U. S. Steel continue to discuss resolution of the matter.

On January 31, 2018, U. S. Steel received a Violation Notice from MDEQ in which MDEQ alleges that U. S. Steel exceeded the applicable six-minute opacity standard at the B2 Blast Furnace Casthouse intermittently on October 25, 2017. U. S. Steel responded to the notice on February 21, 2018. While no penalty has been assessed to date, U. S. Steel met with MDEQ on January 17, 2019 to discuss resolution of the matter.

Granite City Works

In October 2015, Granite City Works received a Violation Notice from IEPA in which the IEPA alleges that U. S. Steel violated the emission limits for nitrogen oxides (NOx) and volatile organic compounds from the Basic Oxygen Furnace Electrostatic Precipitator Stack. In addition, the IEPA alleges that U. S. Steel exceeded its natural gas usage limit at its CoGeneration Boiler. U. S. Steel responded to the notice and is currently discussing resolution of the matter with IEPA.

Although discussions with IEPA regarding the foregoing alleged violations are ongoing and the resolution of these matters is uncertain at this time, it is not anticipated that the result of those discussions will be material to U. S. Steel.

Minnesota Ore Operations

On February 6, 2013, the U.S. EPA published a FIP that applies to taconite facilities in Minnesota. The FIP establishes and requires emission limits and the use of low NOx reduction technology on indurating furnaces as Best Available Retrofit Technology (BART). While U. S. Steel installed low NOx burners on three furnaces at Minntac and is currently obligated to install low NOx burners on the two other furnaces at Minntac pursuant to existing agreements and permits, the rule would require the installation of a low NOx burner on the one furnace at Keetac for which U. S. Steel did not have an otherwise existing obligation. U. S. Steel estimates expenditures associated with the installation of low NOx burners of as much as $25 to $30 million. In 2013, U. S. Steel filed a petition for administrative reconsideration to the U.S. EPA and a petition for judicial review of the 2013 FIP and denial of the Minnesota SIP to the Eighth Circuit. In April 2016, the U.S. EPA promulgated a revised FIP with the same substantive requirements for U. S. Steel. In June 2016, U. S. Steel filed a petition for administrative reconsideration of the 2016 FIP to the U.S. EPA and a petition for judicial review of the 2016 FIP before the Eighth Circuit Court of Appeals. While the proceedings regarding the petition

for judicial review of the 2013 FIP remained stayed, oral arguments regarding the petition for judicial review of the 2016 FIP were heard by the Eighth Circuit Court of Appeals on November 15, 2017. Thus, both petitions for judicial review remain with the Eighth Circuit. On December 4, 2017, U.S. EPA published a notification in the Federal Register in which the U.S. EPA denied U. S. Steel's administrative petitions for reconsideration and stay of the 2013 FIP and 2016 FIP. On February 1, 2018, U. S. Steel filed a petition for judicial review of U.S. EPA's denial of the administrative petitions for reconsideration to the Eighth Circuit Court of Appeals. U. S. Steel continues to defend its three petitions that are before the Eighth Circuit Court of Appeals regarding BART requirements at Minntac and Keetac while pursuing a resolution that would include an equitable revision to the FIP.

Mon Valley Works

On November 9, 2017, U.S. EPA Region III and ACHD jointly issued a Notice of Violation (NOV) regarding the Company's Edgar Thomson facility in Braddock, PA. In addition, on November 20, 2017, ACHD issued a separate, but related NOV to the Company regarding the Edgar Thomson facility. In the NOVs, based upon their inspections and review of documents collected throughout the last two years, the agencies allege that the Company has violated the CAA by exceeding the allowable visible emission standards from certain operations during isolated events. In addition, the agencies allege that the Company has violated certain maintenance, reporting, and recordkeeping requirements. U. S. Steel met with U.S. EPA Region III and ACHD on December 18, 2017. ACHD, U.S. EPA Region III and U. S. Steel continue to negotiate a potential resolution of the matter.

On June 28, 2018, U. S. Steel received an Enforcement Order from the ACHD for the Clairton Plant for alleged violations of various environmental permit and regulatory requirements pertaining to air emissions. The total penalty demand is $1,091,950 for alleged violations that were to have occurred in late 2017 and early 2018. ACHD ordered U. S. Steel to conduct SO_2 stack tests of C Battery Quench Tower exhaust. ACHD also ordered U. S. Steel to provide an assessment of all emissions points at the Clairton facility to ACHD; and to propose measures, for ACHD approval, to reduce SO_2, particulate matter and visible emissions within sixty days of receipt of the Order. In the Order, ACHD demanded that if U. S. Steel fails to meet any requirements in the Order, U. S. Steel shall place its two worst performing batteries on hot idle until ACHD determines U. S. Steel is in compliance with the Order. U. S. Steel has appealed the Order and posted the penalty amount in an escrow account. A hearing was held December 3 - 6, 2018. Post-hearing briefs are currently being drafted and will be submitted in accordance with the Hearing Officer's Scheduling Order. A decision regarding the appeal is not expected until the second quarter 2019.

On November 14, 2018, U. S. Steel received a revised Administrative Order from the ACHD with an assessed penalty of $613,716 for alleged violations regarding fugitive emission sources (coke oven doors, lids, offtakes, charging, high opacity doors and soaking) at the Clairton Plant that were alleged to have occurred during the second quarter of 2018. On December 12, 2018, U. S. Steel appealed the Administrative Order. A hearing date has been scheduled for June 17, 2019.

On December 24, 2018, Clairton Plant experienced a fire, affecting portions of the facility involved in desulfurization of the coke oven gas generated during the coking process. With the desulfurization process being out of operation as a result of the fire, we have not been able to certify compliance with Clairton Plant's Title V permit levels for sulfur emissions. We are working diligently to repair the damaged equipment to restore the desulfurization process to normal operations and expect repairs to be completed during the second quarter of 2019. We promptly notified ACHD, which has regulatory jurisdiction for the Title V permit, and have been updating the ACHD regularly on our efforts to mitigate any potential environmental impacts until the desulfurization process is returned to normal operations. Since December 24, 2018, there were nine hours during which SO_2 emissions exceeded the hourly NAAQS for SO_2 at the Allegheny County regional air quality monitors located in Liberty and North Braddock boroughs which are near our Mon Valley Works facilities. ACHD has asserted that these emission levels are the result of our inability to complete the desulfurization process following the fire and has informed us that it will pursue enforcement action against the

Company following restoration of the desulfurization process to normal operations. On February 13, 2019, PennEnvironment and Clean Air Council, both environmental, non-governmental organizations, sent U. S. Steel a 60-day notice of intent to sue letter pursuant to the CAA. The letter alleges Title V permit violations at the Clairton, Irvin, and Edgar Thomson facilities as a result of the December 24, 2018 Clairton Plant fire. The 60-day notice letter also alleges that the violations are causing adverse public health and welfare impacts to the communities surrounding the Clairton, Irvin, and Edgar Thomson facilities. U. S. Steel is currently evaluating the 60-day notice letter.

Item 4. MINE SAFETY DISCLOSURE

Table of Contents

The information concerning mine safety violations and other regulatory matters required by Section 150 of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K is included in Exhibit 95 to this Form 10-K.

Table of Contents

EXECUTIVE OFFICERS OF THE REGISTRANT

The executive officers of U. S. Steel and their ages as of February 1, 2019, are as follows:

Name	Age	Title	Executive Officer Since
Kevin P. Bradley	56	Executive Vice President & Chief Financial Officer	July 27, 2017
Christine S. Breves	62	Senior Vice President, Manufacturing Support & Chief Supply Chain Officer	April 27, 2017
James E. Bruno	53	Senior Vice President - European Solutions and President - USSK [b]	December 1, 2014
Scott D. Buckiso	51	Senior Vice President - Automotive Solutions [a]	May 31, 2015
David B. Burritt	63	President & Chief Executive Officer	September 1, 2013
Colleen M. Darragh	49	Vice President & Controller	July 17, 2014
Sara A. Greenstein	44	Senior Vice President - Consumer Solutions [a]	December 1, 2014
Duane D. Holloway	46	Senior Vice President, General Counsel, Chief Ethics & Compliance Officer and Corporate Secretary	April 16, 2018
Douglas R. Matthews	53	Senior Vice President - Industrial, Service Center and Mining Solutions [a] and Interim Head - Tubular Business[c]	July 2, 2012
A. Barry Melnkovic	61	Senior Vice President and Chief Human Resources Officer	March 1, 2018

[a] Automotive Solutions, Consumer Solutions, and Industrial, Service Center and Mining Solutions commercial entities are contained within the Flat-Rolled segment.
[b] European Solutions commercial entity is contained within the USSE segment.
[c] Tubular Business commercial entity is contained within the Tubular segment. Douglas R. Matthews assumed responsibilities for the Company's Tubular Segment on an interim basis March 1, 2018.

Messrs. Buckiso, Burritt and Matthews and Mss. Breves and Darragh have held responsible management or professional positions with U. S. Steel or our subsidiaries for more than the past five years. Prior to joining U. S. Steel, Mr. Bradley served as senior vice president and chief financial officer at Terex Corporation, a U.S.-based global manufacturer of lifting and material processing products such as cranes, aerial work platforms, and mobile crushing and screening equipment used in industries ranging from construction and mining to utilities. Prior to joining U. S. Steel, Mr. Bruno was with TRW Automotive, a global leader in automotive safety and one of the world's largest automotive suppliers, for 20 years, most recently serving as vice president – North American braking operations and global slip control portfolio. Ms. Greenstein joined U. S. Steel from Underwriters Laboratories, Inc. (UL) where she was employed for 12 years and most recently held the position of president, UL Supply Chain and Sustainability. Prior to joining U. S. Steel in 2018, Mr. Holloway served as executive vice president and general counsel at Ascena Retail Group Inc., the largest women’s specialty retail and fashion company in the U.S. During his time at Ascena, Mr. Holloway served as global chief legal, compliance, sustainability and diversity officer. Prior to his work at Ascena, Mr. Holloway served as vice president and deputy general counsel for CoreLogic Inc., the leading global residential property information, analytics and data-enabled solutions provider. Prior to joining CoreLogic, Mr. Holloway spent nine years at Caesars Entertainment Corp., where he progressed through increasingly responsible roles in the legal department before being named senior vice president and chief counsel, operations and litigation. Prior to joining U.

S. Steel in 2017, Mr. Melnkovic served as executive vice president and chief human capital officer, Labor Relations, Diversity and Lean Enterprise Solutions for National Railroad Passenger Corporation / Amtrak. Prior to joining Amtrak, Mr. Melnkovic served as the top human resources leader at Lilly Industries, Motor Coach Industries and Holland America Line. He also held senior corporate leadership and officer roles at Owens Corning, including vice president - human resources, vice president - talent management and organizational effectiveness, and interim chief operating officer for one of the company’s business units.

Table of Contents

PART II

Item 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Common Stock Information

The principal market on which United States Steel Corporation (U. S. Steel) common stock is traded is the New York Stock Exchange, where the common stock trades under trading symbol "X". U. S. Steel common stock is also traded on the Chicago Stock Exchange under the symbol "X".

As of February 12, 2019, there were 13,010 registered holders of U. S. Steel common stock.

The Board of Directors currently intends to declare and pay dividends on shares of U. S. Steel common stock based on the financial condition and results of operations of U. S. Steel out of legally available funds and in accordance with the requirements set forth by applicable law. Quarterly dividends were declared by U. S. Steel in 2018 and 2017 in the amount of $0.05 per share.

Purchases of Equity Securities by the Issuer and the Affiliated Purchasers

Share repurchase activity under the Company's stock repurchase program during the three months ended December 31, 2018 was as follows:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs [(a)]
October 1 - 31, 2018	—	$—	—	$—
November 1 - 30, 2018	2,760,112	$27.173	2,760,112	$225,000,000
December 1 - 31, 2018	—	$—	—	$225,000,000
Quarter ended December 31, 2018	2,760,112	$27.173	2,760,112	$225,000,000

[(a)] On November 1, 2018, the Company announced that its Board of Directors authorized a stock repurchase program to repurchase up to $300 million of our outstanding common stock over a two-year period at the discretion of management, of which $75 million had been utilized as of December 31, 2018. The Company’s stock repurchase program does not obligate it to acquire any specific number of shares. Under this program, the shares will be purchased from time to time at prevailing market prices, through open market or privately negotiated transactions, depending upon market conditions.

Table of Contents

Stockholder Return Performance

The graph below compares the yearly change in cumulative total stockholder return of our common stock with the cumulative total return of the Standard & Poor’s (S&P’s) 500 Stock Index and the S&P 600 Steel Index.

Comparison of Cumulative Total Return
on $100 Invested in U. S. Steel Stock on December 31, 2013
vs
S&P 500 and S&P 600 Steel Index[a]

[a] U. S. Steel was removed from the S&P 500 Index effective July 1, 2014. Consequently, U. S. Steel is now part of the S&P 600 Steel Index instead of the S&P 500 Steel Index, which is a subset of the S&P 500. Therefore, current year results may not be comparable to prior years.

For information on securities authorized for issuance under our equity compensation plans, see "Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters."

Recent Sales of Unregistered Securities

U. S. Steel had no sales of unregistered securities during the period covered by this report.

Table of Contents

Item 6. SELECTED FINANCIAL DATA

Dollars in millions (except per share data)[a]	2018	2017	2016	2015	2014
Statement of Operations Data:					
Net sales	$14,178	$12,250	$10,261	$11,574	$17,507
Earnings (loss) before interest and income taxes [b]	1,124	669	(201)	(1,142)	521
Net earnings (loss) attributable to United States Steel Corporation	1,115	387	(440)	(1,642)	102
Per Common Share Data:					
Net earnings (loss) attributable to United States Steel Corporation[c]					
– basic	6.31	2.21	(2.81)	$(11.24)	$0.71
– diluted	6.25	2.19	(2.81)	(11.24)	0.69
Dividends per share declared and paid	0.20	0.20	0.20	0.20	0.20
Balance Sheet Data – December 31:					
Total assets [d] [e]	$10,982	$9,862	$9,160	$9,167	$11,975
Capitalization:					
Debt [e]	$2,381	$2,703	$3,031	$3,138	$3,460
United States Steel Corporation stockholders’ equity	4,202	3,320	2,274	2,436	3,799
Total capitalization	$6,583	$6,023	$5,305	$5,574	$7,259

(a) For discussion of changes between the years, see Item 7. "Management’s Discussion and Analysis of Financial Condition and Results of Operations."

(b) 2014, 2015, 2016 and 2017 amounts have been adjusted as a result of the adoption of Accounting Standards Update 2017-07, Compensation - Retirement Benefits on January 1, 2018.

(c) See Note 8 to the Consolidated Financial Statements for the basis of calculating earnings per share.

(d) 2014 amounts have been adjusted to retroactively adopt Accounting Standards Update 2015-17, Balance Sheet Classification of Deferred Taxes, which requires that all deferred tax assets and liabilities, along with any related valuation allowance, be classified as noncurrent on the balance sheet.

(e) 2015 and 2014 amounts have been adjusted to retroactively adopt Accounting Standards Update 2015-03, Interest-Imputation of Interest (Subtopic 835-30) - Simplifying the Presentation of Debt Issuance Costs, which requires that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of the debt liability.

Table of Contents

Item 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in conjunction with the Consolidated Financial Statements and related notes that appear elsewhere in this document.

Overview

According to World Steel Association’s latest published statistics, U. S. Steel was the twenty-sixth largest steel producer in the world in 2017. Also in 2017 according to World Steel Association’s latest published statistics, U. S. Steel was the third largest steel producer in the United States. U. S. Steel has a broad and diverse mix of products and customers. We use iron ore, coal, coke, steel scrap, zinc, tin, and other metallic additions to produce a wide range of flat-rolled and tubular steel products, concentrating on value-added steel products for customers with demanding technical applications in the transportation, appliance, container, industrial machinery, construction and oil, gas, and petrochemical industries. In addition to our facilities in the United States, U. S. Steel has significant operations in Eastern Europe through U. S. Steel Košice (USSK), located in Slovakia.

We are proud to report the following accomplishments achieved in 2018:

- Outperformed the Bureau of Labor Statistics and AISI industry safety benchmarks in both OSHA Recordable Days and Days Away From Work
- Reported net earnings of $1.115 billion in 2018
- Finished 2018 with adjusted EBITDA of $1.760 billion and positive operating cash flow of $938 million
- Returned over $110 million of capital to stockholders in 2018, including $75 million through share repurchases
- Strong year-end liquidity of approximately $2.830 billion, including $1 billion of cash, which supports our goal of maintaining a healthy balance sheet
- Reduced total debt by $322 million in 2018 as compared to 2017
- Successfully completed a $650 million debt offering and redeemed all outstanding 2021 Senior Secured Notes, providing for future financial flexibility
- Improved our cash conversion cycle by two days
- Continued executing investments in our people and our assets, including investments under our multi-year asset revitalization program that includes $1.5 billion of capital investments in our Flat-Rolled assets
- Continued to lead the U.S. steel industry's efforts to strengthen and enforce trade laws against unfairly traded imports

Our disciplined and balanced capital strategy has positioned our balance sheet to support investments in our business. We continue to take steps to improve and secure our long-term position as an industry leader by reducing our vulnerabilities during down cycles, accentuating our advantages in up cycles, and enabling the creation of value - and the related rewards - for all U. S. Steel stakeholders through business cycles.

Critical Accounting Estimates

Management’s discussion and analysis of U. S. Steel’s financial condition and results of operations is based upon U. S. Steel’s financial statements, which have been prepared in accordance with accounting standards generally accepted in the United States (U.S. GAAP). The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at year-end and the reported amount of revenues and expenses during the year. Management regularly evaluates these estimates, including those related to employee benefits liabilities and assets held in trust relating to such liabilities; the carrying value of property, plant and equipment; intangible assets; valuation allowances for receivables, inventories and deferred income tax assets; liabilities for deferred income taxes, potential tax deficiencies, environmental obligations and potential litigation claims and settlements. Management’s estimates are based on historical experience, current business and market conditions, and various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from current expectations under different assumptions or conditions.

Management believes that the following are the more significant judgments and estimates used in the preparation of the financial statements.

Inventories – Inventories are carried at the lower of cost or market for last-in, first-out (LIFO) inventories and lower of cost and net realizable value for first-in, first-out (FIFO) method inventories. LIFO is the predominant method of inventory costing for inventories in the United States and FIFO is the predominant method used in Europe. The LIFO method of inventory costing was used on 74 percent and 75 percent of consolidated inventories at December 31, 2018 and 2017, respectively. Since the LIFO inventory valuation methodology is an annual calculation, interim estimates of the annual LIFO valuation are required. We recognize the effects of the LIFO inventory valuation method on an interim basis by estimating the year end inventory amounts. The projections of annual LIFO inventory amounts are updated quarterly. Changes in U.S. GAAP rules or tax law, such as the elimination of the LIFO method of accounting for inventories, could negatively affect our profitability and cash flow.

Equity method investments – Investments in entities over which U. S. Steel has significant influence are accounted for using the equity method of accounting and are carried at U. S. Steel’s share of net assets plus loans, advances and our share of earnings less distributions. Differences in the basis of the investment and the underlying net asset value of the investee, if any, are amortized into earnings over the remaining useful life of the associated assets.

Income from investees includes U. S. Steel’s share of income from equity method investments, which is generally recorded a month in arrears, except for significant and unusual items which are recorded in the period of occurrence. Gains or losses from changes in ownership of unconsolidated investees are recognized in the period of change. Intercompany profits and losses on transactions with equity investees have been eliminated in consolidation subject to lower of cost or market inventory adjustments.

U. S. Steel evaluates impairment of its equity method investments whenever circumstances indicate that a decline in value below carrying value is other than temporary. Under these circumstances, we would adjust the investment down to its estimated fair value, which then becomes its new carrying value. During the fourth quarter of 2016, the Company completed a review of its equity method investments and determined there was an other than temporary impairment of its Apolo Tubulars S.A. equity investment due to the intent to sell its ownership interest at an amount less than the carrying value of the investment. Accordingly, U. S. Steel recorded an impairment charge of $12 million, which reduced the carrying value of the investment to $18 million at December 31, 2016. U. S. Steel sold its ownership interest in this equity investment in 2017.

Pensions and other benefits – The recording of net periodic benefit costs for defined benefit pensions and other benefits is based on, among other things, assumptions of the expected annual return on plan assets, discount rate, mortality, escalation or other changes in retiree health care costs and plan participation levels. Changes in the assumptions or differences between actual and expected changes in the present value of liabilities or assets of U. S. Steel's plans could cause net periodic benefit costs to increase or decrease materially from year to year as discussed below.

U. S. Steel's investment strategy for its U.S. pension plan assets provides for a diversified mix of high quality bonds, public equities and selected smaller investments in private equities, timber and mineral interests. For its U.S. pension plan, U. S. Steel has a target allocation for plan assets of 45 percent in corporate bonds, government bonds and mortgage and asset-backed securities. The balance is invested in equity securities, timber, private equity and real estate

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Table of Contents

partnerships. U. S. Steel believes that returns on equities over the long term will be higher than returns from fixed-income securities as actual historical returns from U. S. Steel's trusts have shown. Returns on bonds tend to offset some of the short-term volatility of stocks. Both equity and fixed-income investments are made across a broad range of industries and companies (both domestic and foreign) to provide protection against the impact of volatility in any single industry as well as company specific developments. U. S. Steel will use a 6.50 percent assumed rate of return on assets for the development of net periodic cost for the main defined benefit pension plan in 2019. The 2019 assumed rate of return is lower than the rate of return used for 2018 domestic expense and was determined by taking into account the intended asset mix and some moderation of the historical premiums that fixed-income and equity investments have yielded above government bonds. Actual returns since the inception of the plans have exceeded this 6.50 percent rate and while recent annual returns have been volatile, it is U. S. Steel's expectation that rates will achieve this level in future periods.

For its other benefits plan assets, U. S. Steel employs a liability driven investment strategy. The plan assets are allocated to match the plan cash flows with maturing investments. To achieve this strategy, U. S. Steel has a target allocation for plan assets of 90 percent in high quality bonds with the balance primarily invested in equity securities, timber, private equity and real estate partnerships. U. S. Steel will use a 4.25 percent assumed rate of return on assets for the development of net periodic cost for its other benefits plans. The 2019 assumed rate of return has been conservatively set, taking into account the intended asset mix.

The expected long-term rate of return on plan assets is applied to the market value of assets as of the beginning of the period less expected benefit payments and considering any planned contributions.

To determine the discount rate used to measure our pension and other benefit obligations in 2016 and prior years, the discount rate for our U.S. plans was determined by utilizing several AAA and AA corporate bond indices as an indication of interest rate movements and levels. In 2017, we refined our discount rate determination process for our U.S. plans by using a bond matching approach to select specific bonds that would satisfy our projected benefit payments. At December 31, 2018, the weighted average discount rate used for our pension and other benefit obligations was determined to be 4.41 percent and 4.47 percent, respectively, compared to the weighted average discount rate used of 4.00 percent and 4.03 percent, respectively, at December 31, 2017. The discount rate reflects the current rate at which we estimate the pension and other benefits liabilities could be effectively settled at the measurement date.

U. S. Steel reviews its actual historical rate experience and expectations of future health care cost trends to determine the escalation of per capita health care costs under U. S. Steel's benefit plans. Approximately three quarters of our costs for the domestic United Steelworkers (USW) participants' retiree health benefits in the Company's main domestic benefit plan are limited to a per capita dollar maximum calculation based on 2006 base year actual costs incurred under the main U. S. Steel benefit plan for USW participants (cost cap). The full effect of the cost cap is expected to be realized around 2025. After 2025, the Company's costs for a majority of USW retirees and their dependents are expected to remain fixed and as a result, the cost impact of health care escalation for the Company is projected to be limited for this group (See Note 18 to the Consolidated Financial Statements). For measurement of its domestic retiree medical plans where health care cost escalation is applicable, U. S. Steel has assumed an initial escalation rate of 7.0 percent for 2019. This rate is assumed to decrease gradually to an ultimate rate of 5.0 percent in 2023 and remain at that level thereafter.

Net periodic pension cost, including multiemployer plans, is expected to total approximately $158 million in 2019 compared to $143 million in 2018. Excluding the settlement losses totaling $10 million in 2018, the increase in expected expense in 2019 is primarily due to a lower rate of expected return on asset assumption and a lower asset return than expected for 2018, partially offset by the natural maturation of the plans and increased discount rates. Total other benefits costs in 2019 are expected to be approximately $57 million, compared to $60 million in 2018.

66

Table of Contents

A sensitivity analysis of the projected incremental effect of a hypothetical one percentage point change in the significant assumptions used in the pension and other benefits calculations is provided in the following table:

	Hypothetical Rate Increase (Decrease)	
(In millions)	1%	(1)%
Expected return on plan assets		
Incremental (decrease) increase in:		
Net periodic pension & other benefits costs for 2019	$ (69)	$ 69
Discount rate		
Incremental (decrease) increase in:		
Net periodic pension & other benefits costs for 2019	$ (18)	$ 8
Pension & other benefits obligations at December 31, 2018	$ (650)	$ 770
Health care cost escalation trend rates		
Incremental increase (decrease) in:		
Other post-employment benefit obligations	$ 77	$ (66)
Service and interest costs components for 2019	$ 4	$ (3)

Changes in the assumptions for expected annual return on plan assets and the discount rate used for accounting purposes do not impact the funding calculations used to derive minimum funding requirements for the pension plan. However, the discount rate required for minimum funding purposes is also based on corporate bond related indices and as such, the same general sensitivity concepts as above can be applied to increases or decreases to the funding obligations of the plans assuming the same hypothetical rate changes. (See Note 18 to the Consolidated Financial Statements for a discussion regarding legislation enacted in November of 2015 that impacts the discount rate used for funding purposes.) For further cash flow discussion see "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – Financial Condition, Cash Flows and Liquidity – Liquidity."

Long-lived assets – U. S. Steel evaluates long-lived assets, primarily property, plant and equipment for impairment whenever changes in circumstances indicate that the carrying amounts of those productive assets exceed their recoverable amount as determined by the asset group's projected undiscounted cash flows. We evaluate the impairment of long-lived assets at the asset group level. Our primary asset groups are Flat-Rolled, welded tubular, seamless tubular and U. S. Steel Europe (USSE). During 2018 and 2017, there were no triggering events that required long-lived assets to be evaluated for impairment. During 2016, the permanent shutdown of certain Lorain, Lone Star and Bellville (sold in 2018) tubular assets was considered a triggering event for our welded and seamless tubular asset groups. U. S. Steel completed a quantitative analysis of its long-lived assets for these asset groups within the Tubular segment, and determined that the remaining assets were not impaired. The welded tubular asset group had a carrying value of $410 million at December 31, 2016 and the recoverable amount exceeded this carrying value by approximately $93 million, or 23 percent. The seamless tubular asset group had a carrying value of $210 million at December 31, 2016 and the recoverable amount exceeded this carrying value by $220 million, or 106 percent. The key assumption used to estimate the recoverable amounts for both the welded and seamless tubular asset groups was the forecasted price of oil over the 11-year average remaining useful lives of the assets within the asset groups. Management will continue to monitor market and economic conditions for triggering events that may warrant further review of long-lived assets.

Taxes - U. S. Steel records a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. A valuation allowance is recorded if, based on the weight of all available positive and negative evidence, it is more likely than not that some portion, or all, of a deferred tax asset will not be realized. Each quarter U. S. Steel analyzes the likelihood that our deferred tax assets will be realized.

In 2015, U. S. Steel recorded a valuation allowance against our entire net domestic deferred tax asset. At December 31, 2016, the valuation allowance was increased by $305 million due to an increase in the net domestic deferred tax asset. At December 31, 2017, the valuation allowance was decreased by $505 million due to the reduction in the corporate income tax rate pursuant to the Tax Cut and Jobs Act of 2017 (2017 Act) and current year activity.

At December 31, 2018, U. S. Steel determined, based upon weighing all positive and negative evidence, that a full valuation allowance for the domestic deferred tax assets was no longer required. Accordingly, we reversed a portion of the valuation allowance, which resulted in a $374 million non-cash benefit to earnings. That determination was

based, in part, on U. S. Steel's cumulative income from the past three years and projections of income in future years. In addition, U. S. Steel has had seven consecutive quarters of positive pretax income.
While U. S. Steel can now consider future taxable earnings, there remain certain domestic deferred tax assets that have expiration dates which may limit their realizability, including federal net operating losses (NOLs), state NOLs, state income tax credits, foreign tax credits (FTCs), general business credits (GBCs) and capital losses. Each of these deferred tax assets must be analyzed separately to determine the need for a valuation allowance.
U. S. Steel determined that it was more likely than not that all of the federal NOLs would be realized. However, based on all the evidence, including tax planning strategies, U. S. Steel determined that it was more likely than not that some of the state NOLs, state income tax credits, FTCs and GBCs may not be realized. In addition, U. S. Steel determined that it was more likely than not that all of the capital loss may not be realized. U. S. Steel will continue to monitor the realizability of its deferred tax assets on a quarterly basis. In the future, if we determine that realization is more likely than not for deferred tax assets with a valuation allowance, the related valuation allowance will be reduced, and we will record a non-cash benefit to earnings.
At the end of both 2018 and 2017, U. S. Steel did not have any undistributed foreign earnings and profits for which U.S. deferred taxes have not been provided.
U. S. Steel records liabilities for uncertain tax positions. These liabilities are based on management's judgment of the risk of loss for items that have been or may be challenged by taxing authorities. If U. S. Steel determines that tax-related items would not be considered uncertain tax positions or that items previously not considered to be potential uncertain tax positions could be considered potential uncertain tax positions (as a result of an audit, court case, tax ruling or other authoritative tax position), an adjustment to the liability would be recorded through income in the period such determination was made.
Environmental remediation – U. S. Steel has been identified as a potentially responsible party (PRP) at nine sites under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as of December 31, 2018. Of these, there are three sites where information requests have been received or there are other indications that U. S. Steel may be a PRP under CERCLA, but where sufficient information is not presently available to confirm the existence of liability or to make a reasonable estimate with respect to any potential liabilities. There are also 18 additional sites where U. S. Steel may be liable for remediation costs in excess of $100,000 under other environmental statutes, both federal and state, or where private parties are seeking to impose liability on U. S. Steel for remediation costs through discussions or litigation. At many of these sites, U. S. Steel is one of a number of parties involved and the total cost of remediation, as well as U. S. Steel's share, is frequently dependent upon the outcome of ongoing investigations and remedial studies. U. S. Steel accrues for environmental remediation activities when the responsibility to remediate is probable and the amount of associated costs is reasonably determinable. As environmental remediation matters proceed toward ultimate resolution or as remediation obligations arise, charges in excess of those previously accrued may be required.
U. S. Steel's accrual for environmental liabilities for U.S. and international facilities as of December 31, 2018 and 2017 was $187 million and $179 million, respectively. These amounts exclude liabilities related to asset retirement obligations, disclosed in Note 19 to the Consolidated Financial Statements.
U. S. Steel is the subject of, or a party to, a number of pending or threatened legal actions, contingencies and commitments involving a variety of matters, including laws and regulations relating to the environment. The ultimate resolution of these contingencies could, individually or in the aggregate, be material to the Consolidated Financial Statements.
For discussion of relevant environmental items, see "Part I. Item 3. Legal Proceedings—Environmental Proceedings."
Segments

U. S. Steel has three reportable segments: North American Flat-Rolled (Flat-Rolled), U. S. Steel Europe (USSE) and Tubular Products (Tubular). The results of our railroad and real estate businesses that do not constitute reportable segments are combined and disclosed in the Other Businesses category.

The Flat-Rolled segment includes the operating results of U. S. Steel’s integrated steel plants and equity investees in North America involved in the production of slabs, strip mill plates, sheets and tin mill products, as well as all iron ore and coke production facilities in the United States. These operations primarily serve North American customers in the service center, conversion, transportation (including automotive), construction, container, and appliance and electrical

markets. Additionally, the Flat-Rolled segment consists of the following three commercial entities to specifically address our customers and service their needs: (1) automotive solutions, (2) consumer solutions, and (3) industrial, service center and mining solutions.

The USSE segment includes the operating results of U. S. Steel Košice (USSK), U. S. Steel's integrated steel plant and coke production facilities in Slovakia, and its subsidiaries. USSE primarily serves customers in the Eastern European service center, conversion, transportation (including automotive), construction, container, appliance and electrical, and oil, gas and petrochemical markets. USSE produces and sells slabs, strip mill plates, sheets, tin mill products and spiral welded pipe, as well as heating radiators and refractory ceramic materials.

The Tubular segment includes the operating results of U. S. Steel's tubular production facilities and an equity investee in the United States. We had an equity investee, Apolo Tubulars S.A., in Brazil, and we sold our ownership interest in it in December of 2017. These operations produce and sell seamless and electric resistance welded (ERW) steel casing and tubing (commonly known as oil country tubular goods or OCTG), standard and line pipe and mechanical tubing and primarily serve customers in the oil, gas and petrochemical markets. In March 2017, U. S. Steel made the strategic decision to permanently shutdown the Lorain No. 6 Quench & Temper Mill.

For further information, see Note 4 to the Consolidated Financial Statements.

Net Sales

Net Sales by Segment

(Dollars in millions, excluding intersegment sales)	2018	2017	2016
Flat-Rolled	$9,681	$8,297	$7,507
USSE	3,205	2,949	2,243
Tubular	1,231	944	449
Total sales from reportable segments	14,117	12,190	10,199
Other Businesses	61	60	62
Net sales	$14,178	$12,250	$10,261

Table of Contents

Management's analysis of the percentage change in net sales for U. S. Steel's reportable business segments is set forth in the following tables:

Year Ended December 31, 2018 versus Year December 31, 2017

	Steel Products[a]					
	Volume	Price	Mix	FX[b]	Coke, Pellets & Other[c]	Net Change
Flat-Rolled	5 %	12 %	(1)%	— %	1 %	17 %
USSE	(3)%	5 %	2 %	5 %	— %	9 %
Tubular	14 %	15 %	1 %	— %	— %	30 %

(a) Excludes intersegment sales
(b) Foreign currency translation effects
(c) Includes sales of scrap inventory

The increase in sales for the Flat-Rolled segment primarily reflected higher average realized prices (increase of $85 per net ton) and higher shipments (increase of 623 thousand net tons) as a result of improved market conditions, notably for hot-rolled products from 2017 to 2018. Improved market conditions reflect accelerated demand for steel products in line with the recent economic growth, as well as the supply-demand balance between imported and domestic steel. The restart of the two blast furnaces at our Granite City Works during 2018 enabled us to take advantage of the improved market dynamics.

The increase in sales for the USSE segment was primarily due to higher average realized euro-based prices (increase of €35 per net ton) as a result of improved market conditions in line with recent economic growth and favorable currency impacts from 2017 to 2018. These favorable impacts were partially offset by decreased shipments (decrease of 128 thousand net tons).

The increase in sales from 2017 to 2018 for the Tubular segment primarily reflected higher average realized prices (increase of $230 per net ton) and increased shipments (increase of 92 thousand net tons) as a result of improved market conditions and drilling activity.

Year Ended December 31, 2017 versus Year Ended December 31, 2016

	Steel Products[a]					
	Volume	Price	Mix	FX[b]	Coke, Pellets & Other[c]	Net Change
Flat-Rolled	(3)%	26 %	(16)%	— %	4 %	11 %
USSE	2 %	26 %	— %	2 %	1 %	31 %
Tubular	74 %	13 %	17 %	— %	6 %	110 %

(a) Excludes intersegment sales
(b) Foreign currency translation effects
(c) Includes sales of scrap inventory

The increase in sales for the Flat-Rolled segment primarily reflected higher average realized prices (increase of $60 per net ton) as a result of improved market conditions, notably for hot-rolled products, that resulted in spot price

increases in 2017 as well as price increases for both market-based and firm priced contracts from 2016 to 2017, and sales also increased due to a favorable impact from higher third-party pellet sales. These increases were partially offset by a lower value product mix and decreased shipments (decrease of 207 thousand net tons).

The increase in sales for the USSE segment was primarily due to higher average realized euro-based prices (increase of €115 per net ton) as a result of lower imports and increased shipments (increase of 89 thousand net tons).

The increase in sales from 2016 to 2017 for the Tubular segment primarily reflected increased shipments (increase of 288 thousand net tons), a favorable impact on product mix as a result of increased shipments of seamless tubular products, and higher average realized prices (increase of $182 per net ton) as a result of improved market conditions.

Table of Contents

Operating Expenses

Union profit-sharing costs

	Year Ended December 31,		
(Dollars in millions)	2018	2017	2016
Allocated to segment results	$ 92	$ 35	$ 3

Effective January 1, 2016, profit-based amounts per the 2015 Labor Agreements are calculated and paid on a quarterly basis as a percentage of consolidated earnings (loss) before interest and income taxes based on 7.5 percent of profit between $10 and $50 per ton and 15 percent of profit above $50 per ton. There were no changes to the calculation of profit-based amounts in the 2018 Labor Agreements.

The amounts above represent profit-sharing amounts paid to active USW-represented employees and are included in cost of sales on the Consolidated Statement of Operations.

Pension and other benefits costs

Pension and other benefit costs (other than service cost) are reflected within net interest and other financial costs and the service cost component is reflected within cost of sales in the Consolidated Statements of Operations.

Defined benefit and multiemployer pension plan costs included in cost of sales totaled $109 million in 2018, $109 million in 2017 and $117 million in 2016.

Costs related to defined contribution plans totaled $44 million in 2018 and $42 million in 2017 and 2016, respectively.

Other benefit expense included in cost of sales totaled $17 million in 2018, $17 million in 2017 and $20 million in 2016.

Selling, general and administrative expenses

Selling, general and administrative expenses were $336 million in 2018, $320 million in 2017 and $306 million in 2016. The increase from 2017 to 2018 is primarily related to increased variable compensation. The increase from 2016 to 2017 is primarily due to an increase in other post-employment benefit costs, which include workers' compensation and black lung benefits costs.

Operating configuration adjustments

Over the past three years, the Company has adjusted its operating configuration in response to changing market conditions including global overcapacity, unfair trade practices and increases in domestic demand as a result of tariffs on imports by indefinitely and temporarily idling and then re-starting production at certain of its facilities.

In February 2019, U. S. Steel announced plans to restart the No. 1 Electric-Weld Pipe mill (No. 1 mill) at Lone Star Tubular Operations in Lone Star, Texas. The No. 1 mill was idled in 2016. Also in February 2019, U. S. Steel announced plans to restart the delayed electric arc furnace (EAF) capital project located in Fairfield, Alabama. See Note 29 to the Consolidated Financial Statements for further details.

In 2018 and 2017, the Granite City Works steelmaking operations and hot strip mill, respectively, were restarted after they were temporarily idled in 2015.

Also in 2017, U. S. Steel made the strategic decision to permanently shutdown the Lorain No. 6 Quench & Temper Mill.

Other Strategic Decisions

U. S. Steel will continue to evaluate potential strategic and organizational opportunities, which may include the acquisition, divestiture or consolidation of assets. Given the cyclicality of our industry, we are focused on strategically maintaining and spending cash (including capital investments under our asset revitalization program), in order to invest in areas consistent with our long-term strategy, such as sustainable steel technologies, and are considering various possibilities, including exiting lines of business and the sale of certain assets, that we believe would ultimately result

in maintaining a strong balance sheet and greater stockholder value. The Company will pursue opportunities based on its long-term strategy, and what the Board of Directors determines to be in the best interests of the Company's stockholders at the time.

Better operating performance in our Flat-Rolled segment, coupled with relatively stable market conditions during 2018, have resulted in improved segment results in recent quarters. As we continue with the implementation of our asset revitalization program, described below, and increase investment in our facilities, we expect the sustainable improvements in safety, quality, delivery and costs we are targeting to position us to succeed over the long term, and support future growth initiatives.

Asset Revitalization

As part of our long-term strategy, the Board of Directors has approved a $2 billion multi-year asset revitalization program focused on our Flat-Rolled segment. The program is structured over four years, and involves capital investments totaling approximately $1.5 billion. Management evaluated performance in the key industries we serve, and developed projects across multiple Flat-Rolled segment assets with a focus on continuous improvement in safety, quality, delivery and cost. The Company views this program as essential to improving predictability and our ability to compete effectively in the industry. As we revitalize our assets, we are increasing profitability, productivity, and operational stability, and reducing volatility. The identified projects and schedule may change to address our customers’ needs, current and future economic operating conditions, and risks identified in the production cycle. The Company plans to fund the program through cash generated from operations and cash on hand. Our total capital expenditures for 2018 were $1,001 million, which includes $335 million for the Company’s asset revitalization program. Through 2018, we have made $584 million in capital expenditures related to the asset revitalization program. For 2019, we expect $300-350 million in capital expenditures related to the program. See Item 1. Business, Business Strategy - Asset Revitalization for more information.

Depreciation, depletion and amortization

Depreciation, depletion and amortization expenses were $521 million in 2018, $501 million in 2017 and $507 million in 2016. The increase from 2017 to 2018 is primarily due to increased capital spending from prior years. Depreciation expense in 2017 was consistent with 2016 depreciation expense.

Earnings from investees

Earnings from investees was $61 million in 2018, $44 million in 2017 and $98 million in 2016. The increase from 2017 to 2018 is primarily due to decreased losses from joint venture finishing affiliates. The decrease from 2016 to 2017 is primarily due to decreased earnings from our joint venture finishing and mining affiliates.

Restructuring and Other Charges

During 2017, U. S. Steel recorded net restructuring charges of approximately $31 million, which consists of charges of $37 million primarily related to the permanent shutdown of the No. 6 Quench & Temper Mill at Lorain Tubular Operations and a favorable adjustment of $6 million primarily associated with a change in estimate for previously recorded costs for environmental obligations and Company-wide headcount reductions. Cash payments were made related to severance and exit costs of $32 million.

During 2016, U. S. Steel recorded net restructuring charges of approximately $122 million, which consists of: (1) charges of $124 million related to the permanent shutdown of the Lorain #4, Lone Star #1 and Bellville pipe mills within our Tubular segment; (2) charges of $24 million for Company-wide headcount reductions, including within our Flat-Rolled, Tubular and USSE segments; and (3) a favorable adjustment of $26 million primarily associated with a change in estimate for previously recorded costs for Company-wide headcount reductions. Cash payments were made related to severance and exit costs of $79 million.

Charges for restructuring and ongoing cost reduction initiatives are recorded in the period U. S. Steel commits to a restructuring or cost reduction plan, or executes specific actions contemplated by the plan and all criteria for liability recognition have been met. Charges related to the restructuring and cost reductions are reported in restructuring and other charges in the Consolidated Statements of Operations.

Gain and loss associated with U. S. Steel Canada Inc. (USSC)

Table of Contents

USSC, a former indirect wholly owned subsidiary of U. S. Steel, applied for relief from its creditors pursuant to Canada's Companies' Creditors Arrangement Act in September of 2014. On June 30, 2017, U. S. Steel completed the restructuring and disposition of USSC through a sale and transfer of all of the issued and outstanding shares in USSC to an affiliate of Bedrock Industries LLC. In accordance with the Second Amended and Restated Plan of Compromise, Arrangement and Reorganization, approved by the Ontario Superior Court of Justice on June 9, 2017, U. S. Steel received approximately $127 million in satisfaction of its secured claims, including interest, which resulted in a gain of $72 million on the Company's retained interest in USSC. U. S. Steel also agreed to the discharge and cancellation of its unsecured claims for nominal consideration. The terms of the settlement also included mutual releases among key stakeholders, including a release of all claims against the Company regarding environmental, pension and other liabilities.

Earnings (loss) before interest and income taxes by Segment [(a)]

	Year Ended December 31,		
(Dollars in Millions)	2018	2017	2016
Flat-Rolled	$ 883	$ 375	$ 22
USSE	359	327	185
Tubular	(58)	(99)	(303)
Total earnings (loss) from reportable segments	1,184	603	(96)
Other Businesses	55	44	63
Segment earnings (loss) before interest and income taxes	1,239	647	(33)
Other items not allocated to segments:			
USW labor agreement signing bonus and related costs (Note 28)	(81)	—	—
Granite City Works restart and related costs	(80)	—	—
Loss on shutdown of certain tubular pipe mill assets [(b)]	—	(35)	(126)
Gain associated with U. S. Steel Canada Inc. (Note 5)	—	72	—
Restructuring and other charges [(b)]	—	—	2
Granite City Works temporary idling charges	8	(17)	(18)
Gain (loss) on equity investee transactions (Note 12)	38	2	(12)
Impairment of intangible assets (Note 14)	—	—	(14)
Total earnings (loss) before interest and income taxes	$ 1,124	$ 669	$ (201)

(a) See Note 4 to the Consolidated Financial Statements for reconciliations and other disclosures required by Accounting Standards Codification Topic 280.

(b) Included in Restructuring and other charges on the Consolidated Statements of Operations. See Note 25 to the Consolidated Financial Statements.

Table of Contents

Gross Margin by Segment

	Year Ended December 31,		
	2018	2017	2016
Flat-Rolled	15 %	11 %	6 %
USSE	15 %	15 %	14 %
Tubular	1 %	(2)%	(43)%

Table of Contents

Segment results for Flat-Rolled
(Excludes the results of USSC beginning September 16, 2014)

Average Realized Price Per Ton	Segment Earnings (Loss) before Interest and Income Taxes

The Flat-Rolled segment had earnings of $883 million for the year ended December 31, 2018 compared to earnings of $375 million for the year ended December 31, 2017. The increase in Flat-Rolled results for 2018 compared to 2017 resulted from higher average realized prices (approximately $950 million), and increased shipments, including substrate to our Tubular segment ($135 million) as a result of improved market conditions, and lower energy costs (approximately $30 million), respectively. These changes were partially offset by higher raw material costs (approximately $320 million), increased spending for operating and maintenance costs (approximately $180 million) and an increase in other operating costs primarily due to increased variable compensation (approximately $105 million).

The Flat-Rolled segment had earnings of $375 million for the year ended December 31, 2017 compared to earnings of $22 million for the year ended December 31, 2016. The increase in Flat-Rolled results for 2017 compared to 2016 resulted from higher average realized prices (approximately $695 million) as a result of improved market conditions, a favorable impact related to our change in accounting method for property, plant and equipment (approximately $150 million), higher results from our mining operations (approximately $80 million) including benefits from the restart of our Keetac facility to support third-party pellet sales, and increased shipments to our Tubular segment (approximately $50 million). These changes were partially offset by increased maintenance and asset revitalization spending and other operating costs (approximately $350 million) and higher raw materials costs, primarily scrap and coal (approximately $275 million).

Table of Contents

Gross margin for 2018 as compared to 2017 increased primarily as a result of higher average realized prices due to improved contract and spot market prices. Gross margin for 2017 as compared to 2016 increased primarily as a result of higher average realized prices due to improved contract and spot market prices, in addition to the favorable impact on cost of goods sold related to our change in accounting method for property, plant and equipment.

Table of Contents

Segment results for USSE

The USSE segment had earnings of $359 million for the year ended December 31, 2018 compared to earnings of $327 million for the year ended December 31, 2017. The increase in USSE results in 2018 compared to 2017 was primarily due to higher average realized euro-based prices (approximately $165 million) and the strengthening of the euro versus the U.S. dollar in 2018 (approximately $60 million). These changes were partially offset by higher raw materials costs (approximately $85 million) including a favorable first-in-first out (FIFO) inventory impact, increased spending for operating and maintenance costs (approximately $45 million), decreased shipments (approximately $20 million) and higher other and energy costs (approximately $45 million).

The USSE segment had earnings of $327 million for the year ended December 31, 2017 compared to earnings of $185 million for the year ended December 31, 2016. The increase in USSE results in 2017 compared to 2016 was primarily due to higher average realized euro-based prices (approximately $600 million), the strengthening of the euro versus the U.S. dollar in 2017 as compared to the prior year (approximately $15 million) and increased shipments (approximately $10 million). These changes were partially offset by higher raw materials costs, primarily coal and iron ore (approximately $475 million).

Gross margin for 2017 as compared to 2016 increased primarily due to higher average realized euro-based prices, partially offset by higher raw materials costs.

Table of Contents

Segment results for Tubular

The Tubular segment had a loss of $58 million for the year ended December 31, 2018 compared to a loss of $99 million for the year ended December 31, 2017. The increase in Tubular results in 2018 as compared to 2017 was primarily due to higher average realized prices (approximately $110 million), shipment volumes (approximately $20 million) and lower other costs ($10 million). These changes were partially offset by higher substrate costs (approximately $85 million) and increased operating costs (approximately $15 million).

The Tubular segment had a loss of $99 million for the year ended December 31, 2017 compared to a loss of $303 million for the year ended December 31, 2016. The increase in Tubular results in 2017 as compared to 2016 was primarily due to higher average realized prices and shipment volumes as a result of improving market conditions (approximately $105 million), decreased labor and other operating costs (approximately $95 million), favorable impacts from changes to our operating footprint (approximately $35 million) and favorable lower of cost or market (LCM) adjustments (approximately $30 million). These changes were partially offset by higher substrate costs (approximately $60 million).

Gross margin for 2018 as compared to 2017 increased primarily due to increased average realized prices and shipment volumes and operating efficiencies. Gross margin for 2017 as compared to 2016 increased primarily due to increased average realized prices and shipment volumes and operating efficiencies.

Table of Contents

Results for Other Businesses

Other Businesses had earnings of $55 million, $44 million and $63 million for 2018, 2017 and 2016, respectively.

Table of Contents

Items not allocated to segments:

We recorded a charge of $81 million for United Steelworkers labor agreement signing bonus and related costs associated with the 2018 Labor Agreements with the United Steelworkers.

We recorded $80 million for Granite City Works restart and related costs as a result of costs associated with the restart of the "A" and "B" blast furnaces.

We recorded a $35 million loss on the shutdown of certain tubular assets in 2017 as a result of the permanent shutdown of the No. 6 Quench & Temper Mill at Lorain Tubular Operations. We recorded a loss on shutdown of certain tubular pipe mill assets of $126 million in 2016 as a result of the permanent closure of the Lorain #4 and Lone Star #1 pipe mills and the Bellville Tubular Operations.

We recognized a $72 million gain associated with U. S. Steel Canada Inc. (USSC) as a result of the restructuring and disposition of USSC on June 30, 2017.
We recorded a favorable adjustment of $8 million in 2018 and expense of $17 million and $18 million in 2017 and 2016, respectively, for Granite City Works temporary idling charges.

We recognized a gain on equity investee transactions of $38 million and $2 million in 2018 and 2017, respectively. In 2018, we recognized gains on equity investee transactions of approximately $18 million for the assignment of our 33% ownership interest in Leeds Retail Center, LLC and $20 million from the sale of our 40% ownership interest in Acero Prime, S. R. L. de CV. The 2017 gain was primarily due to the sale of our 15% ownership interest in Tilden Mining Company, L.C., partially offset by a loss on sale of our 50% ownership interest in Apolo Tubulars S.A. (Apolo). In 2016, the Company determined there was an other than temporary impairment of its Apolo equity investment due to the intent to sell its ownership interest at an amount less than the carrying value of the investment. Accordingly, an impairment charge of $12 million was recorded in 2016. The Company sold its ownership interest in this equity investment in 2017 as discussed above. (see Note 12 to the Consolidated Financial Statements, "Investments and Long-Term Receivables and Equity Investee Transactions" for further details).
We recorded an impairment charge of $14 million on our indefinite lived intangible assets related to certain of our patents in our Tubular segment as a result of an annual quantitative evaluation that was performed during the third quarter of 2016.

Net Interest and Other Financial Costs

	Year Ended December 31,		
(Dollars in millions)	2018	2017	2016
Interest income	$(23)	$(17)	$(5)
Interest expense	168	226	230
Net periodic benefit cost (other than service cost)	69	61	(36)
Loss on debt extinguishment	98	54	22
Other financial costs	—	44	4
Net interest and other financial costs	$312	$368	$215

During 2018, U. S. Steel issued $650 million aggregate principal amount of 6.250% Senior Notes due 2026 (2026 Senior Notes) and had borrowings of €200 million (approximately $229 million) from the USSK Credit Agreement. Also, during 2018, through a series of open market purchases, U. S. Steel repurchased approximately $75 million of its 7.375% Senior Notes due in 2020 (2020 Senior Notes) and redeemed the remaining $357 million. Additionally,

U. S. Steel tendered and then redeemed the $780 million aggregate principal amount of its 8.375% Senior Secured Notes due 2021 (2021 Senior Secured Notes). The aggregate redemption costs of these repurchases and redemptions totaled $1,296 million, which included $1,212 million for the remaining principal balances and $84 million of redemption premiums which have been reflected within the loss on debt extinguishment line in the table above. For further information see Note 17 to the Consolidated Financial Statements.

Table of Contents

During 2017, U. S. Steel issued $750 million of 6.875% Senior Notes due August 2025 (2025 Senior Notes) and redeemed $161 million of 7.000% Senior Notes due 2018, $200 million of 6.875% Senior Notes due 2021, and $400 million of 7.500% Senior Notes due 2022 for an aggregate redemption cost of approximately $808 million, which included $761 million for the remaining principal balances, $21 million in accrued and unpaid interest and $26 million of redemption premiums which have been reflected within the loss on debt extinguishment line in the table above. Additionally, U. S. Steel redeemed $200 million of its 8.375% Senior Secured Notes due 2021 for an aggregate redemption cost of approximately $227 million, which included $200 million for the remaining principal balance, $8 million in accrued and unpaid interest and $19 million of redemption premiums which have been reflected within the loss on debt extinguishment line in the table above.

During 2016, U. S. Steel issued $980 million of 8.375% Senior Secured Notes due July 2021 (2021 Senior Secured Notes) and repurchased several tranches of its outstanding senior notes through various tender offers, redemptions and open market purchases, including the redemption of the remaining 6.050% Senior Notes due 2017 for an aggregate principal amount of approximately $444 million plus a total make whole premium of approximately $22 million, which has been reflected within the loss on debt extinguishment line in the table above.

The net periodic benefit cost (other than service cost) of pension and other benefit costs are a component of net interest and other financial costs. The increase in 2018 as compared to 2017 is mainly due to a lower return on assets assumption for pension benefits. The increase in 2017 as compared to 2016 is primarily due to lower return on assets assumptions as a result of action taken in 2016 to de-risk the OPEB plan. For additional information on pensions and other benefits, see Note 18 to the Consolidated Financial Statements.

The net decrease in net interest and other financial costs in 2018 as compared to 2017 is primarily due to reduced interest expense as a result of our improved debt profile and net foreign currency gains on our euro-U.S. dollar derivatives partially offset by a higher loss on debt extinguishment in 2018 (as described above).

The increase in net interest and other financial costs from 2016 to 2017 is primarily due to increased other benefits expense (as described above), an increase in loss on debt extinguishment and decreased foreign currency gains, partially offset by increased interest income as a result of increased cash balances and interest rates in 2017 as compared to 2016.

For additional information on U. S. Steel’s foreign currency exchange activity see Note 16 to the Consolidated Financial Statements and Item 7A. "Quantitative and Qualitative Disclosures about Market Risk – Foreign Currency Exchange Rate Risk.”

Income Taxes

The income tax benefit for the year ended December 31, 2018 was $303 million compared to an income tax benefit of $86 million in 2017 and an income tax provision of $24 million in 2016. Included in the 2018 tax benefit is a benefit of $374 million related to the reversal of a portion of the valuation allowance recorded against the Company’s net domestic deferred tax asset, as well as a benefit of $38 million related to the reversal of the valuation allowance for current year activity.

Included in the 2017 tax benefit is a benefit of $10 million related to the corporate rate reduction provided by the Tax Cut and Jobs Act of 2017 (2017 Act), as well as a benefit of $71 million related to the reversal of the valuation allowance recorded against the remaining balance of the Company’s Alternative Minimum Tax (AMT) credits, which became fully refundable pursuant to the 2017 Act. Also included in the 2017 tax benefit is a benefit of $48 million related to the Company’s election to claim a refund of AMT credits pursuant to a provision in the Protecting Americans from Tax Hikes Act (PATH Act).

Included in the 2016 tax provision is a benefit of $18 million related to the Company's election to claim a refund of AMT credits pursuant to a provision in the PATH Act. The 2016 provision also reflects a write-off of certain deferred tax assets and liabilities related to branch operations pursuant to new regulations. However, the write-off did not impact the total provision because of the valuation allowance on the net domestic deferred tax asset.

After review of the 2017 Act and guidance provided to date, the Company has completed its evaluation of the impact, which was immaterial.

The net domestic deferred tax asset was $445 million at December 31, 2018, net of an established valuation allowance of $211 million, compared to a net domestic deferred tax asset of $53 million at December 31, 2017, net of an established valuation allowance of $604 million.

Table of Contents

At December 31, 2018, the net foreign deferred tax liability was $14 million, net of an established valuation allowance of $3 million. At December 31, 2017, the net foreign deferred tax liability was $3 million, net of an established valuation allowance of $4 million.

For further information on income taxes see Note 11 to the Consolidated Financial Statements.

Net earnings/(loss) attributable to U. S. Steel

Net earnings attributable to U. S. Steel in 2018 was $1,115 million compared to net earnings of $387 million in 2017 and a net loss of $(440) million in 2016, respectively. The changes primarily reflected the factors discussed above.

Financial Condition, Cash Flows and Liquidity

Financial Condition

Accounts receivable increased by $280 million from year-end 2017 primarily due to higher average realized prices in all three reportable segments, as well as increased shipment volumes in our Flat-Rolled and Tubular segments in 2018 compared to 2017.

Inventories increased by $354 million from December 31, 2017 primarily as a result of increased operating levels and higher raw materials prices across all of our segments.
Property, plant and equipment, net increased by $585 million due to the level of capital expenditures exceeding depreciation expense.
Deferred income tax benefits increased by $389 million due to the reversal of a portion of the valuation allowance on our domestic deferred tax assets in 2018.
Accounts payable and other accrued liabilities increased by $313 million from year-end 2017 primarily as a result of increased operating levels and higher raw materials prices across all of our segments.

Payroll and benefits payable increased by $93 million from year-end 2017 primarily due to profit-based payment accruals related to 2018 financial performance that will be paid in the first quarter of 2019.

Short-term debt and current maturities of long-term debt increased by $62 million from year-end 2017 primarily due to upcoming repayment requirements for environmental bonds.

Long-term debt decreased by $384 million from year-end 2017 primarily due to the redemption of $432 million of 7.375% Senior Notes due in 2020 and, pursuant to a cash tender offer followed by a redemption of $780 million of 8.375% Senior Secured Notes due in 2021 and the reclassification of amounts for upcoming environmental bond repayments to current maturities of long-term debt as discussed above. These decreases were partially offset by the issuance of $650 million of 6.250% Senior Notes due in 2026 and borrowings of €200 million (approximately $229 million) under the USSK Credit Agreement.

Employee benefits increased by $221 million from year-end 2017 primarily due to lower than expected returns on plan assets partially offset by the natural maturation of our pension plans and a higher discount rate.

Table of Contents

Cash Flows

Net cash provided by operating activities was $938 million in 2018 compared to $826 million in 2017 and $754 million in 2016. The increase in 2018 compared to 2017 and 2017 compared to 2016 is primarily due to improved financial results, partially offset by changes in working capital period over period. Changes in working capital can vary significantly depending on factors such as the timing of inventory production and purchases, which is affected by the length of our business cycles as well as our captive raw materials position, customer payments of accounts receivable and payments to vendors in the regular course of business.

Our key working capital components include accounts receivable and inventory. The accounts receivable and inventory turnover ratios for the years ended December 31, 2018 and 2017 are as follows:

	Year Ended December 31,	
	2018	2017
Accounts Receivable Turnover	9.3	9.3
Inventory Turnover	6.4	6.6

The last-in, first-out (LIFO) inventory method is the predominant method of inventory costing in the United States. At December 31, 2018 and 2017, the LIFO method accounted for 74 percent and 75 percent of total inventory values, respectively. In the U.S., management monitors the inventory realizability by comparing the LIFO cost of inventory with the replacement cost of inventory. To the extent the replacement cost (i.e., market value) of inventory is lower than the LIFO cost of inventory, management will write the inventory down. As of December 31, 2018 and 2017, the replacement cost of the inventory was higher by approximately $1,038 million and $802 million, respectively.

Our cash conversion cycle improved two days in the fourth quarter of 2018 from the fourth quarter of 2017 as shown below:

Cash Conversion Cycle	2018		2017	
	$ millions	Days	$ millions	Days
Accounts receivable, net [(a)]	$1,659	42	$1,379	43
+ Inventories [(b)]	$2,092	58	$1,738	58
- Accounts Payable and Other Accrued Liabilities [(c)]	$2,477	72	$2,163	71
= Cash Conversion Cycle [(d)]		28		30

[(a)] Calculated as Average Accounts Receivable, net divided by total Net Sales multiplied by the number of days in the period.
[(b)] Calculated as Average Inventory divided by total Cost of Sales multiplied by the number of days in the period.
[(c)] Calculated as Average Accounts Payable and Other Accrued Liabilities less bank checks outstanding and other current liabilities divided by total Cost of Sales multiplied by the number of days in the period.
[(d)] Calculated as Accounts Receivable Days plus Inventory Days less Accounts Payable Days.

Table of Contents

Net cash provided by operating activities for 2018, 2017 and 2016 reflects employee benefits payments as shown in the following table.

Employee Benefits Payments

	Year Ended December 31,			
(Dollars in millions)	2018	2017	2016	
Voluntary contributions to main defined benefit pension plan [b]	$ —	$ 75	$ 13	[a]
Other employee benefits payments not funded by trusts	48	59	61	
Payments to a multiemployer pension plan	60	59	63	
Pension related payments not funded by trusts	20	13	26	
Reductions in cash flows from operating activities	$ 128	$ 206	$ 163	

[a] Represents a contribution related to the payment of Pension Benefit Guarantee Corporation (PBGC) fees.
[b] In 2016, we also made a voluntary contribution in Company stock valued at approximately $100 million.

Table of Contents

Capital expenditures in 2018 were $1,001 million compared to $505 million in 2017 and $306 million in 2016.

2018 Capital Spending
Total capital expenditures for 2018 were over $1 billion. Flat-rolled capital expenditures were $820 million and included spending for the Great Lakes Works Blast Furnace D4 Major Repairs, Edgar Thomson Plant SO_2 Boiler Stack project, Gary Works No. 83 Stove Rebuild, and various other infrastructure, environmental and strategic projects. Tubular capital expenditures of $45 million related to Offshore Operations Threading Line extension, Lorain Seamless Rotary Motor Mill, Offshore Operations premium thread line, as well as various other strategic capital projects. USSE capital expenditures of $104 million consisted of spending for a boiler house upgrade, Blast Furnace No. 13 stove rebuild, pickle line upgrades, coke battery through-wall replacement and various other infrastructure and environmental projects.

2017 Capital Spending
Flat-rolled capital expenditures were $388 million and included spending for the Mon Valley Works blast furnace stove rebuild, Gary Works blast furnace reline and skip incline replacement, Edgar Thomson Basic Oxygen Process (BOP) R vessel hood replacement, Midwest Plant galvanneal furnace upgrade, Great Lakes Works BOP truss off gas main replacement, and various other infrastructure, environmental and strategic projects. Tubular capital expenditures of $28 million related to Lone Star pipe mill finishing, Offshore Operations premium thread line and Lorain primary electric utility supply, as well as various other strategic capital projects. USSE capital expenditures of $83 million consisted of spending for a boiler house upgrade, pickle line upgrades, coke battery through-wall replacement and various other infrastructure and environmental projects.

2016 Capital Spending
Flat-rolled capital expenditures were $111 million and included spending for the Gary Works No. 1 Caster upgrade and certain other blast furnace upgrades, the Great Lakes Works Pickle Line Tank replacement, Continuous Galvanized Line (CGL) Strip Cleaning and Roller Coater, and various other infrastructure, environmental and strategic projects. Tubular capital expenditures of $88 million related to the delayed electric arc furnace (EAF) and coupling facilities projects as well as various other infrastructure and strategic capital projects. USSE capital expenditures of $83 million consisted of spending for a boiler house upgrade, pickle line upgrades and various other infrastructure and environmental projects.

Capital expenditures for 2019 are expected to total approximately $1,200 million and remain focused largely on strategic, infrastructure and environmental projects, as well as asset revitalization of our equipment to improve our operating reliability and efficiency, and product quality and cost by focusing on investments in our Flat-Rolled segment.

U. S. Steel’s contractual commitments to acquire property, plant and equipment at December 31, 2018, totaled $601 million.

In 2018, U. S. Steel sold its 40% ownership interest in Acero Prime, S. R. L. de CV for a pretax gain of $20 million.

In 2017, U. S. Steel received approximately $11 million for the sale of its 50% ownership interest in Apolo Tubulars S.A. and approximately $105 million for the sale of its 15% ownership in Tilden Mining Company L.C.

Also in 2017, U. S. Steel received approximately $127 million in satisfaction of its secured and unsecured claims, including interest, as a result of the restructuring and disposition of USSC on June 30, 2017.

Revolving credit facilities - borrowings totaled $228 million in 2018, which represents cash received from borrowings under the USSK Credit Agreement.

Issuance of long-term debt, net of financing costs, totaled $640 million in 2018. In 2018, U. S. Steel issued $650 million of 6.250% Senior Notes due March 15, 2026. U. S. Steel received net proceeds from the offering of approximately $640 million after fees of approximately $10 million related to the underwriting and third party expenses. In 2017, U. S. Steel issued $750 million of 6.875% Senior Notes due August 15, 2025. U. S. Steel received net proceeds from the offering of approximately $737 million after fees of approximately $13 million related to the underwriting and third party expenses. In 2016, U. S. Steel issued $980 million of its 8.375% Senior Secured Notes due July 1, 2021. U. S. Steel received net proceeds from the offering of approximately $958 million after fees of approximately $22 million related to underwriting and third party expenses. For further information see Note 17 to the Consolidated Financial Statements.

Repayment of long-term debt totaled $1,299 million in 2018. In 2018, through a series of open market purchases, U. S. Steel repurchased approximately $75 million aggregate principal amount of its 7.375% Senior Notes due 2020 (7.375% Senior Notes) for an aggregate cash outflow of $80 million which included $5 million of premiums. U. S. Steel then redeemed the remaining $357 million aggregate principal amount of its 7.375% Senior Notes for an aggregate cash outflow of $376 million which included $19 million of premiums. Also in 2018, the Company tendered and then redeemed its $780 million 8.375% Senior Secured Notes due 2021 for an aggregate cash outflow of $840 million which included $60 million of premiums. Repayment of long-term debt in 2017 reflects the redemption of the entire aggregate principal amount of $70 million of the Lorain County Port Authority Recovery Zone Facility Revenue Bonds. Additionally in 2017, U. S. Steel redeemed $161 million of 7.000% Senior Notes due 2018, $200 million of 6.875% Senior Notes due 2021, and $400 million of 7.500% Senior Notes due 2022 for a total aggregate redemption cost of approximately $808 million. Also during 2017, U. S. Steel redeemed $200 million of 8.375% Senior Secured Notes due 2021 for an aggregate redemption cost of approximately $227 million. Repayment of long-term debt in 2016 reflects the repurchase of approximately $6 million of U. S. Steel's 6.05% Senior Notes due 2017 through open market purchases and the redemption of the remaining aggregate principal amount of approximately $444 million. Also during 2016, U. S. Steel repurchased portions of its outstanding senior notes which included the 7.000% Senior Notes due 2018, 7.375% Senior Notes due 2020, and the 6.875% Senior Notes due 2021 for a total aggregate principal value of approximately $582 million through a series of tender offers and open market purchases. For further information see Note 17 to the Consolidated Financial Statements.

Common stock repurchased totaled $75 million in 2018 and is a result of the repurchase of 2,760,112 shares under our common stock repurchase program approved in 2018. See Note 27 to the Consolidated Financial Statements, “Common Stock Repurchase Program and Common Stock Issuance” for further details.

Net proceeds from our public offering of 21,735,000 shares of common stock totaled $482 million in 2016. Third-party expenses related to the issuance were approximately $18 million. See Note 27 to the Consolidated Financial Statements, “Common Stock Repurchase Program and Common Stock Issuance” for further details.

For all four quarters in 2018, 2017 and 2016, dividends paid per share of U. S. Steel common stock was $0.05.

Liquidity

The following table summarizes U. S. Steel’s liquidity as of December 31, 2018:

(Dollars in millions)	
Cash and cash equivalents	$1,000
Amount available under $1.5 Billion Credit Facility	1,500
Amounts available under USSK credit facilities	330
Total estimated liquidity	$2,830

As of December 31, 2018, $147 million of the total cash and cash equivalents was held by our foreign subsidiaries. Substantially all of the liquidity attributable to our foreign subsidiaries can be accessed without the imposition of income taxes as a result of the election effective December 31, 2013 to liquidate for U.S. income tax purposes a foreign subsidiary that holds most of our international operations.

U. S. Steel maintains a $1.5 billion asset-backed revolving credit facility. As of December 31, 2018, there were no amounts drawn on the $1.5 billion credit facility (Credit Facility Agreement). U. S. Steel must maintain a fixed charge coverage ratio of at least 1.00 to 1.00 for the most recent four consecutive quarters when availability under the Credit Facility Agreement is less than the greater of 10% of the total aggregate commitments and $150 million. Based on the four quarters as of December 31, 2018, we have met this covenant. If we are unable to meet this covenant in future periods, the amount available to the Company under this facility would be reduced by $150 million.

At December 31, 2018, USSK had borrowings of €200 million (approximately $229 million) under its €460 million (approximately $527 million) unsecured revolving credit facility (the USSK Credit Agreement). The USSK Credit Agreement contains certain USSK financial covenants as well as other customary terms and conditions. At December 31, 2018, USSK had availability of an additional €260 million (approximately $298 million) under the USSK Credit Agreement.

At December 31, 2018, USSK had no borrowings under its €20 million and €10 million unsecured credit facilities (collectively approximately $34 million) and the aggregate availability was approximately $32 million due to approximately $2 million of customs and other guarantees outstanding. During the fourth quarter of 2018, USSK amended its €20 million and €10 million unsecured credit facilities, extending the maturity of both to December 2021. In March 2018, U. S. Steel issued $650 million aggregate principal amount of 6.250% Senior Notes due March 15, 2026 (2026 Senior Notes). U. S. Steel received net proceeds from the offering of approximately $640 million after fees of approximately $10 million related to the underwriting and third-party expenses. The net proceeds from the issuance of the 2026 Senior Notes, together with cash on hand, were used to tender or otherwise redeem all of our outstanding 2021 Senior Secured Notes. (see Note 17 to the Consolidated Financial Statements, “Debt” for further details). U. S. Steel will pay interest on the notes semi-annually in arrears on March 15th and September 15th of each year, commencing on September 15, 2018.

In August of 2017, U. S. Steel issued $750 million of 6.875% Senior Notes due August 15, 2025 (2025 Senior Notes). U. S. Steel received net proceeds from the offering of approximately $737 million after fees of approximately $13 million related to the underwriting and third party expenses. The net proceeds from the issuance of the 2025 Senior Notes, together with cash on hand, were used to repurchase portions of our outstanding senior notes. Interest on the notes is payable semi-annually in arrears on February 15th and August 15th of each year, commencing on February 15, 2018.

We may from time to time seek to retire or repurchase our outstanding long-term debt through open market purchases, privately negotiated transactions, exchange transactions, redemptions or otherwise. Such purchases or exchanges,

Table of Contents

if any, will depend on prevailing market conditions, our liquidity requirements, and other factors and may be commenced or suspended at any time. The amounts involved may be material.

We use surety bonds, trusts and letters of credit to provide financial assurance for certain transactions and business activities. The use of some forms of financial assurance and cash collateral have a negative impact on liquidity. U. S. Steel has committed $181 million of liquidity sources for financial assurance purposes as of December 31, 2018. Increases in certain of these commitments which use collateral are reflected in restricted cash on the Consolidated Statement of Cash Flows.

At December 31, 2018, in the event of a change in control of U. S. Steel: (a) debt obligations totaling $1,979 million as of December 31, 2018 may be declared due and payable; (b) the Credit Facility Agreement and the USSK credit facilities may be terminated and any amounts outstanding declared due and payable; and (c) U. S. Steel may be required to either repurchase the leased Fairfield slab caster for $22 million or provide a cash collateralized letter of credit to secure the remaining obligation.

The maximum guarantees of the indebtedness of unconsolidated entities of U. S. Steel totaled $4 million at December 31, 2018. If any default related to the guaranteed indebtedness occurs, U. S. Steel has access to its interest in the assets of the investees to reduce its potential losses under the guarantees.

The following table summarizes U. S. Steel's contractual obligations at December 31, 2018, and the effect such obligations are expected to have on our liquidity and cash flows in future periods.

(Dollars in millions)

			Payments Due by Period			
Contractual Obligations	Total	2019	2020 through 2021	2022 through 2023	Beyond 2023	
Long-term debt (including interest) and capital leases[a]	$3,824	$212	$308	$539	$2,765	
Operating leases[b]	303	66	100	65	72	
Contractual purchase commitments[c]	5,167	3,185	794	606	582	
Capital commitments[d]	601	451	150	—	—	
Environmental commitments[d]	187	37	—	—	150	(e)
Steelworkers Pension Trust[f]	379	66	151	162	—	
Pensions[g]	766	—	65	415	286	
Other benefits[h]	252	50	103	99	—	
Total contractual obligations	$11,479	$4,067	$1,671	$1,886	$3,855	

(a) See Note 17 to the Consolidated Financial Statements.

(b) See Note 24 to the Consolidated Financial Statements. Amounts exclude subleases.

(c) Reflects contractual purchase commitments under purchase orders and "take or pay" arrangements. "Take or pay" arrangements are primarily for purchases of gases and certain energy and utility services. Additionally, includes coke and steam purchase commitments related to a coke supply agreement with Gateway Energy & Coke Company LLC (See Note 26 to the Consolidated Financial Statements).

(d) See Note 26 to the Consolidated Financial Statements.

(e) Timing of potential cash flows is not reasonably determinable.

(f) While it is difficult to make a prediction of cash requirements beyond the term of the 2018 Labor Agreements with the USW, which expire on September 1, 2022, projected amounts shown through 2023 assume the contribution rate per hour included in the 2018 Labor Agreements. For the schedule of contribution rate per hour, see Note 28 to the Consolidated Financial Statements.

(g)

Projections are estimates of the minimum required contributions to the main domestic defined benefit pension plan which have been estimated assuming future asset performance consistent with our expected long-term earnings rate assumption, no voluntary contributions during the periods, and that the current low interest rate environment persists. Projections include the impacts of the November 2015 pension stabilization legislation, which further extended a revised interest rate formula to be used in calculating minimum required annual contributions. The legislation also increased the contribution rate of future PBGC premiums. After 2023, payments represent minimum contributions that may be needed over the next five years, and which would fully fund the plan.

(h) The amounts reflect corporate cash outlays for expected benefit payments to be paid by the Company. (See Note 18 to the Consolidated Financial Statements). The accuracy of this forecast of future cash flows depends on future medical health care escalation rates and restrictions related to our trusts for retiree healthcare and life insurance (VEBA) that impact the timing of the use of trust assets. Projected amounts have been reduced to reflect withdrawals from the USW VEBA trust available under its agreements with the USW. Due to these factors, it is not possible to reliably estimate cash requirements beyond five years and actual amounts experienced may differ significantly from those shown.

Table of Contents

Contingent lease payments have been excluded from the above table. Contingent lease payments relate to operating lease agreements that include a floating rental charge, which is associated to a variable component. Future contingent lease payments are not determinable to any degree of certainty. U. S. Steel's annual incurred contingent lease expense is disclosed in Note 24 to the Consolidated Financial Statements. Additionally, recorded liabilities related to deferred income taxes and other liabilities that may have an impact on liquidity and cash flow in future periods, disclosed in Note 11 to the Consolidated Financial Statements, are excluded from the above table.

U. S. Steel made a voluntary contribution to our main U.S. defined benefit plan of $75 million in 2017. U. S. Steel will monitor the funded status of the plan to determine when voluntary contributions may be prudent in order to mitigate potentially larger mandatory contributions in later years. The funded status of U. S. Steel's pension plans is disclosed in Note 18 to the Consolidated Financial Statements.

Table of Contents

The following table summarizes U. S. Steel's commercial commitments at December 31, 2018, and the effect such commitments could have on our liquidity and cash flows in future periods.

(Dollars in millions)

		Scheduled Reductions by Period				
Commercial Commitments	Total	2019	2020 through 2021	2022 through 2023	Beyond 2023	
Standby letters of credit[a]	$40	$30	$ 1	$ —	$ 9	[b]
Surety bonds[a]	111	—	—	—	111	[b]
Funded Trusts[a]	13	—	—	—	13	[b]
Total commercial commitments	$164	$30	$ 1	$ —	$ 133	

(a) Reflects a commitment or guarantee for which future cash outflow is not considered likely.
(b) Timing of potential cash outflows is not determinable.

Our major cash requirements in 2019 are expected to be for capital expenditures, including asset revitalization, employee benefits and operating costs, which includes purchases of raw materials. We ended 2018 with $1,000 million of cash and cash equivalents and $2,830 million of total liquidity. Available cash is left on deposit with financial institutions or invested in highly liquid securities with parties we believe to be creditworthy.

U. S. Steel management believes that U. S. Steel's liquidity will be adequate to satisfy our obligations for the foreseeable future, including obligations to complete currently authorized capital spending programs. Future requirements for U. S. Steel's business needs, including the funding of acquisitions and capital expenditures, scheduled debt maturities, repurchase of debt, share buyback, contributions to employee benefit plans, and any amounts that may ultimately be paid in connection with contingencies, are expected to be funded by a combination of internally generated funds (including asset sales), proceeds from the sale of stock, borrowings, refinancings and other external financing sources.

Off-Balance Sheet Arrangements

U. S. Steel has invested in several joint ventures that are reported as equity investments. Several of these investments involved a transfer of assets in exchange for an equity interest. U. S. Steel has supply arrangements with several of these joint ventures.

U. S. Steel's other off-balance sheet arrangements include guarantees, indemnifications, unconditional purchase obligations, surety bonds, trusts and letters of credit disclosed in Note 26 to the Consolidated Financial Statements as well as operating leases disclosed in Note 24 to the Consolidated Financial Statements.

Derivative Instruments

See "Item 7A. Quantitative and Qualitative Disclosures About Market Risk" for discussion of derivative instruments and associated market risk for U. S. Steel.

Change in Accounting Estimate

Capitalization and Depreciation Method

During 2017, U. S. Steel completed a review of its accounting policy for property, plant and equipment depreciated on a group basis. As a result of this review, U. S. Steel changed its accounting method for property, plant and equipment

from the group method of depreciation to the unitary method of depreciation, effective as of January 1, 2017. The change from the group method to the unitary method of depreciation is preferable under U.S. GAAP as it will result in a more precise estimate of depreciation expense. Additionally, the change to the unitary method of depreciation is consistent with the depreciation method applied by our competitors, and improves the comparability of our results to our competitors. Our change in the method of depreciation is considered a change in accounting estimate effected by a change in accounting principle and has been applied prospectively.

When property, plant, and equipment are disposed of by sale, retirement, or abandonment, the gross value of the property, plant and equipment and corresponding accumulated depreciation are removed from the Company’s financial accounting records. Due to the application of the unitary method of depreciation, any gain or loss resulting from an

Table of Contents

asset disposal by sale will now be immediately recognized as a gain or loss on the disposal of assets line in our consolidated statement of operations. Assets that are retired or abandoned will be reflected as an immediate charge to depreciation expense for any remaining book value in our consolidated statement of operations. Gains (losses) on disposals of assets for the year ended December 31, 2018 and 2017 were immaterial.

For the year ended December 31, 2018, the effect of the change was an increase in both income from continuing operations and net earnings of $455 million (which consists of a $504 million decrease in cost of sales due to the capitalization of maintenance and outage spending that would have been previously expensed, partially offset by increased depreciation expense of $49 million, as a result of the impact of unitary depreciation on the existing net book value of fixed assets and the capitalization of maintenance and outage spending) and an increase in diluted earnings per share of $2.55. The tax effect of this change was immaterial to the consolidated financial statements.

For the year ended December 31, 2017, the effect of the change was an increase in both income from continuing operations and net earnings of $344 million (which consists of a $381 million decrease in cost of sales due to the capitalization of maintenance and outage spending that would have been previously expensed, partially offset by increased depreciation expense of $37 million, as a result of the impact of unitary depreciation on the existing net book value of fixed assets and the capitalization of maintenance and outage spending) and an increase in diluted earnings per share of $1.95. The tax effect of this change was immaterial to the consolidated financial statements.

Table of Contents

Environmental Matters

U. S. Steel’s environmental expenditures were as follows:

(Dollars in millions)	2018	2017	2016
North America:			
Capital	$105	$6	$5
Compliance			
Operating & maintenance	198	176	167
Remediation[a]	6	9	17
Total North America	$309	$191	$189
USSE:			
Capital	$20	$46	$26
Compliance			
Operating & maintenance	12	11	11
Remediation[a]	9	7	6
Total USSE	$41	$64	$43
Total U. S. Steel	$350	$255	$232

(a) These amounts include spending charged against remediation reserves, net of recoveries where permissible, but do not include non-cash provisions recorded for environmental remediation.

U. S. Steel’s environmental capital expenditures accounted for 12 percent of total capital expenditures in 2018 and 10 percent in 2017 and 2016.

Environmental compliance expenditures represented two percent of U. S. Steel's total costs and expenses in 2018, 2017 and 2016. Remediation spending during 2016 through 2018 was mainly related to remediation activities at former and present operating locations.

For discussion of other relevant environmental items see “Part I, Item 3. Legal Proceedings – Environmental Proceedings.”

The following table shows activity with respect to environmental remediation liabilities for the years ended December 31, 2018 and December 31, 2017. These amounts exclude liabilities related to asset retirement obligations accounted for in accordance with ASC Topic 410. See Note 19 to the Consolidated Financial Statements.

(Dollars in millions)	2018	2017
Beginning Balance	$179	$179
Plus: Additions	14	8
Less: Obligations settled	(6)	(8)
Ending Balance	$187	$179

New or expanded environmental requirements, which could increase U. S. Steel’s environmental costs, may arise in the future. U. S. Steel intends to comply with all legal requirements regarding the environment, but since many of them are not fixed or presently determinable (even under existing legislation) and may be affected by future legislation, it is not possible to predict accurately the ultimate cost of compliance, including remediation costs which may be incurred and penalties which may be imposed. U. S. Steel’s environmental capital expenditures are expected to be approximately $120 million in 2019, $50 million of which is related to projects at USSE. U. S. Steel's environmental expenditures for 2019 for operating and maintenance and for remediation projects are expected to be approximately $190 million and $50 million, respectively, of which approximately $15 million and $10 million for

operating and maintenance and remediation, respectively, is related to USSE. Although, the outcome of pending environmental matters are not estimable at this time, it is reasonably possible that U. S. Steel's environmental capital and operating and maintenance expenditures could materially increase as a result of the future resolution of these matters. Predictions of future environmental expenditures beyond 2019 can only be broad-based estimates, which have varied, and will continue

to vary, due to the ongoing evolution of specific regulatory requirements, the possible imposition of more stringent requirements and the availability of new technologies to remediate sites, among other factors.

Accounting Standards

See Notes 2 and 3 to the Consolidated Financial Statements in Part II Item 8 of this Form 10-K.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

U. S. Steel is exposed to certain risks related to its ongoing business operations, including financial, market, political, and economic risks. The following discussion provides information regarding U. S. Steel's exposure to the risks of changing foreign currency exchange rates, commodity prices and interest rates.

U. S. Steel may enter into derivative financial instrument transactions in order to manage or reduce these market risks. The use of derivative instruments is subject to our corporate governance policies. These instruments are used solely to mitigate market exposure and are not used for trading or speculative purposes.

U. S. Steel may elect to use hedge accounting for certain commodity or currency transactions. For those transactions, the impact of the hedging instrument will be recognized in other comprehensive income until the transaction is settled. Once the transaction is settled, the effect of the hedged item will be recognized in income. For further information regarding derivative instruments see Notes 1 and 16 to the Consolidated Financial Statements.

Foreign Currency Exchange Rate Risk

U. S. Steel, through USSE, is subject to the risk of price fluctuations due to the effects of exchange rates on revenues and operating costs, firm commitments for capital expenditures and existing assets or liabilities denominated in currencies other than the U.S. dollar, particularly the euro. U. S. Steel historically has made limited use of forward currency contracts to manage exposure to certain currency price fluctuations. U. S. Steel has not elected to use hedge accounting for these contracts. Foreign currency derivative instruments have been marked-to-market and the resulting gains or losses recognized in the current period in net interest and other financial costs. At December 31, 2018 and December 31, 2017, U. S. Steel had open euro forward sales contracts for U.S. dollars (total notional value of approximately $344 million and $273 million, respectively). A 10 percent increase in the December 31, 2018 euro forward rates would result in a $33 million charge to income.

The fair value of our derivatives is determined using Level 2 inputs, which are defined as "significant other observable" inputs. The inputs used include quotes from counterparties that are corroborated with market sources.

Volatility in the foreign currency markets could have significant implications for U. S. Steel as a result of foreign currency transaction effects. Future foreign currency impacts will depend upon changes in currencies and the extent to which we engage in derivatives transactions. For additional information on U. S. Steel's foreign currency exchange activity, see Note 16 to the Consolidated Financial Statements.

Commodity Price Risk and Related Risks

In the normal course of our business, U. S. Steel is exposed to market risk or price fluctuations related to the purchase, production or sale of steel products. U. S. Steel is also exposed to price risk related to the purchase, production or sale of coal, coke, natural gas, steel scrap, iron ore and pellets, and zinc, tin and other nonferrous metals used as raw

materials. See Note 16 to the Consolidated Financial Statements for further details on U. S. Steel's derivatives.

U. S. Steel's market risk strategy has generally been to obtain competitive prices for our products and services and allow operating results to reflect market price movements dictated by supply and demand; however, U. S. Steel has made forward physical purchases to manage exposure to price risk related to the purchases of natural gas and certain non-ferrous metals used in the production process.

U. S. Steel held commodity contracts for natural gas forward buys placed for 2019 that qualified for the normal purchases and normal sales exemption with a total notional value of approximately $26 million at December 31, 2018. Total commodity contracts for natural gas forward buys placed for 2019 at December 31, 2018 represent approximately 10 percent of our expected North American natural gas requirements.

Table of Contents

Interest Rate Risk

U. S. Steel is subject to the effects of interest rate fluctuations on the fair value of certain of our non-derivative financial instruments. A sensitivity analysis of the projected incremental effect of a hypothetical 10 percent increase/decrease in year-end 2018 and 2017 interest rates on the fair value of U. S. Steel's non-derivative financial instruments is provided in the following table:

(Dollars in millions)	2018		2017	
Non-Derivative Financial Instruments[(a)]	Fair Value[(b)]	Change in Fair Value[(c)]	Fair Value[(b)]	Change in Fair Value[(c)]
Financial liabilities:				
Debt[(d)(e)]	$2,182	$ 102	$2,851	$ 93

(a) Fair values of cash and cash equivalents, current accounts and notes receivable, accounts payable, bank checks outstanding and accrued interest approximate carrying value and are relatively insensitive to changes in interest rates due to the short-term maturity of the instruments. Accordingly, these instruments are excluded from the table.

(b) See Note 20 to the Consolidated Financial Statements for carrying value of instruments.

(c) Reflects, by class of financial instrument, the estimated incremental effect of a hypothetical 10 percent change in interest rates at December 31, 2018 and 2017, on the fair value of U. S. Steel's non-derivative financial instruments. For financial liabilities, this assumes a 10 percent decrease in the weighted average yield to maturity of U. S. Steel's long-term debt at December 31, 2018 and December 31, 2017.

(d) Excludes capital lease obligations.

(e) Fair value was determined using Level 2 inputs which were derived from quoted market prices and is based on the yield on public debt where available or current borrowing rates available for financings with similar terms and maturities.

U. S. Steel's sensitivity to interest rate declines and corresponding increases in the fair value of our debt portfolio would unfavorably affect our results and cash flows only to the extent that we elected to repurchase or otherwise retire all or a portion of our fixed-rate debt portfolio at prices above carrying value.

Table of Contents

Item 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The information required by this item is set forth in our Consolidated Financial Statement contained in this Annual Report on Form 10-K. Specific financial statements can be found at the page listed below:

	PAGE
MANAGEMENT'S REPORT TO STOCKHOLDERS	F-2
REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM	F-4
CONSOLIDATED STATEMENTS OF OPERATIONS FOR THE YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016	F-6
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS) FOR THE YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016	F-7
CONSOLIDATED BALANCE SHEETS AS OF DECEMBER 31, 2018 AND 2017	F-8
CONSOLIDATED STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016	F-9
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY FOR THE YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016	F-10
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS	F-12
SUPPLEMENTARY DATA (UNAUDITED)	F-57

Table of Contents

MANAGEMENT'S REPORT TO STOCKHOLDERS

February 15, 2019

To the Stockholders of United States Steel Corporation:

Financial Statements and Practices

The accompanying consolidated financial statements of United States Steel Corporation are the responsibility of and have been prepared by United States Steel Corporation in conformity with accounting principles generally accepted in the United States of America. They necessarily include some amounts that are based on our best judgments and estimates. United States Steel Corporation's financial information displayed in other sections of this report is consistent with these financial statements.

United States Steel Corporation seeks to assure the objectivity and integrity of its financial records by careful selection of its managers, by organizational arrangements that provide an appropriate division of responsibility and by communication programs aimed at assuring that its policies, procedures and methods are understood throughout the organization.

United States Steel Corporation has a comprehensive, formalized system of internal controls designed to provide reasonable assurance that assets are safeguarded, that financial records are reliable and that information required to be disclosed in reports filed with or submitted to the Securities and Exchange Commission is recorded, processed, summarized and reported within the required time limits. Appropriate management monitors the system for compliance and evaluates it for effectiveness, and the auditors independently measure its effectiveness and recommend possible improvements thereto.

The Board of Directors exercises its oversight role in the area of financial reporting and internal control over financial reporting through its Audit Committee. This committee, composed solely of independent directors, regularly meets (jointly and separately) with the independent registered public accounting firm, management, internal audit and other executives to monitor the proper discharge by each of their responsibilities relative to internal control over financial reporting and United States Steel Corporation's financial statements.

Internal Control Over Financial Reporting

United States Steel Corporation's management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of United States Steel Corporation's management, including the Chief Executive Officer and Chief Financial Officer, United States Steel Corporation conducted an evaluation of the effectiveness of its internal control over financial reporting based on the framework in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Table of Contents

Based on this evaluation, United States Steel Corporation's management concluded that United States Steel Corporation's internal control over financial reporting was effective as of December 31, 2018.

The effectiveness of United States Steel Corporation's internal control over financial reporting as of December 31, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

/S/ DAVID B. BURRITT	/S/ KEVIN P. BRADLEY
David B. Burritt	Kevin P. Bradley
President and	Executive Vice President and
Chief Executive Officer	Chief Financial Officer

/S/ COLLEEN M. DARRAGH
Colleen M. Darragh
Vice President and Controller

Table of Contents

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of United States Steel Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of United States Steel Corporation and its subsidiaries (the “Company”) as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income (loss), stockholders’ equity, and cash flows for each of the three years in the period ended December 31, 2018, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for property, plant, and equipment in 2017.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report to Stockholders on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of

internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Table of Contents

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP
Pittsburgh, Pennsylvania
February 15, 2019

We have served as the Company's auditor since 1903.

Table of Contents

UNITED STATES STEEL CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
(Dollars in millions, except per share amounts)	2018	2017	2016
Net sales:			
Net sales	$12,758	$11,046	$9,045
Net sales to related parties (Note 23)	1,420	1,204	1,216
Total	14,178	12,250	10,261
Operating expenses (income):			
Cost of sales (excludes items shown below)	12,305	10,858	9,608
Selling, general and administrative expenses	336	320	306
Depreciation, depletion and amortization (Notes 13 and 14)	521	501	507
Earnings from investees (Note 12)	(61)	(44)	(98)
Gain on equity investee transactions (Note 12)	(38)	(2)	—
Gain associated with U. S. Steel Canada Inc. (Note 5)	—	(72)	—
Restructuring and other charges (Note 25)	—	31	122
Impairment of intangible assets (Note 14)	—	—	14
Net (gain) loss on disposals of assets	(6)	(5)	5
Other income, net	(3)	(6)	(2)
Total	13,054	11,581	10,462
Earnings (loss) before interest and income taxes	1,124	669	(201)
Interest expense	168	226	230
Interest income	(23)	(17)	(5)
Loss on debt extinguishment	98	54	22
Other financial costs	—	44	4
Net periodic benefit cost (other than service cost) (Note 3) [a]	69	61	(36)
Net interest and other financial costs (Note 7)	312	368	215
Earnings (loss) before income taxes	812	301	(416)
Income tax (benefit) provision (Note 11)	(303)	(86)	24
Net earnings (loss)	1,115	387	(440)
Less: Net earnings attributable to noncontrolling interests	—	—	—
Earnings (loss) attributable to United States Steel Corporation	$1,115	$387	$(440)
Earnings (loss) per common share (Note 8)			
Earnings (loss) per share attributable to United States Steel Corporation stockholders:			
— Basic	$6.31	$2.21	$(2.81)
— Diluted	$6.25	$2.19	$(2.81)

[a] Represents postretirement benefit expense as a result of the adoption of Accounting Standards Update 2017-07, Compensation - Retirement Benefits on January 1, 2018 (see Note 3 for further details).

The accompanying notes are an integral part of these Consolidated Financial Statements.

Table of Contents

UNITED STATES STEEL CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Year Ended December 31,		
(Dollars in millions)	2018	2017	2016
Net earnings (loss)	$		