

sales without physical delivery. We recognized revenues of \$436 million, \$693 million and \$163 million during the years ended December 31, 2020, 2019 and 2018, respectively, related to these transactions.

The following table presents the components of LNG revenues and the corresponding LNG volumes sold:

	Year Ended December 31,		
	2020	2019	2018
LNG revenues (in millions):			
LNG from the Liquefaction Projects sold under third party long-term agreements (1)	\$ 6,303	\$ 6,342	\$ 4,762
LNG from the Liquefaction Projects sold by our integrated marketing function under short-term agreements	802	1,943	1,902
LNG procured from third parties	414	268	745
LNG revenues associated with cargoes not delivered per customer notification (2)	969	—	—
Other revenues and derivative gains	436	693	163
Total LNG revenues	<u>\$ 8,924</u>	<u>\$ 9,246</u>	<u>\$ 7,572</u>
Volumes delivered as LNG revenues (in TBtu):			
LNG from the Liquefaction Projects sold under third party long-term agreements (1)	1,158	1,090	761
LNG from the Liquefaction Projects sold by our integrated marketing function under short-term agreements	227	368	212
LNG procured from third parties	103	40	84
Total volumes delivered as LNG revenues	<u>1,488</u>	<u>1,498</u>	<u>1,057</u>

(1) Long-term agreements include agreements with an initial tenure of 12 months or more.

(2) LNG revenues include revenues with no corresponding volumes due to revenues attributable to LNG cargoes for which customers notified us that they would not take delivery.

Operating costs and expenses

(in millions)	Year Ended December 31,				
	2020	2019	Change	2018	Change
Cost of sales	\$ 4,161	\$ 5,079	\$ (918)	\$ 4,597	\$ 482
Operating and maintenance expense	1,320	1,154	166	613	541
Development expense	6	9	(3)	7	2
Selling, general and administrative expense	302	310	(8)	289	21
Depreciation and amortization expense	932	794	138	449	345
Impairment expense and loss on disposal of assets	6	23	(17)	8	15
Total operating costs and expenses	<u>\$ 6,727</u>	<u>\$ 7,369</u>	<u>\$ (642)</u>	<u>\$ 5,963</u>	<u>\$ 1,406</u>

2020 vs. 2019 and 2019 vs. 2018

Our total operating costs and expenses decreased during the year ended December 31, 2020 from the year ended December 31, 2019, primarily as a result of decreased cost of sales, partially offset by increased operating and maintenance expense and depreciation and amortization expense from additional operating Trains between the periods. Our total operating costs and expenses increased during the year ended December 31, 2019 from the year ended December 31, 2018 primarily as a result of the increase in operating Trains between each of the periods, and further due to increased third-party service and maintenance costs from turnaround and related activities at the SPL Project.

Cost of sales includes costs incurred directly for the production and delivery of LNG from the Liquefaction Projects, to the extent those costs are not utilized for the commissioning process. Cost of sales decreased during the year ended December 31, 2020 from the comparable 2019 period, primarily due to decreased pricing of natural gas feedstock between the periods and decreased vessel charter costs. Partially offsetting this decrease was decreased fair value of commodity derivatives to secure natural gas feedstock for the Liquefaction Projects due to unfavorable shifts in long-term forward prices relative to our hedged position and increases in costs associated with sale of unutilized natural gas procured for the liquefaction process and a portion of derivative instruments that settle through physical delivery. Cost of sales increased during the year ended December 31, 2019 from the year ended December 31, 2018 due to increased volume of natural gas feedstock partially offset by decreased