

### At a Glance

## S. 2881, 5G Spectrum Act of 2019

As ordered reported by the Senate Committee on Commerce, Science, and Transportation on December 11, 2019

By Fiscal Year, Millions of Dollars	2020	2020-2025	2020-2030
Direct Spending (Outlays)	0	1,160	2,470
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	1,160	2,470
Spending Subject to Appropriation (Outlays)	0	*	not estimated
Statutory pay-as-you-go procedures apply?	Yes	<b>Mandate Effects</b>	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2031?	< \$5 billion	Contains intergovernmental mandate?	<b>Yes, Under Threshold</b>
		Contains private-sector mandate?	<b>Yes, Under Threshold</b>

\* = between zero and \$500,000.

#### The bill would

- Direct the Federal Communications Commission (FCC) to conduct an auction of licenses to use a portion of the electromagnetic spectrum
- Authorize the FCC to spend some of the auction proceeds, without further appropriation, to compensate current users of the frequencies and for programs to support the deployment of broadband infrastructure in rural areas
- Direct the FCC to issue rules regarding the spending of 911 fees collected by states and other jurisdictions
- Impose public- and private-sector mandates by preempting certain state and local laws

#### Estimated budgetary effects would primarily stem from

- Increasing the government's gross auction receipts
- Authorizing the FCC to spend 60 percent of the auction proceeds

#### Areas of significant uncertainty include

- Identifying what the terms and conditions for a C-band auction would be under current law
- Projecting the market value of licenses
- Estimating the timing of receipt collections from auctions under current law and under the bill

**Detailed estimate begins on the next page.**



## Bill Summary

S. 2881 would amend existing law regarding the disposition of offsetting receipts from an auction of licenses to use a section of electromagnetic spectrum often called the C-band.<sup>1</sup> Under the bill, the Federal Communications Commission (FCC) would be authorized to spend, without further appropriation, up to 50 percent of the auction proceeds to compensate current users and another 10 percent for programs that support the deployment of broadband infrastructure in rural areas. The rest—which could exceed 40 percent of the total if gross auction receipts exceed \$40 billion—would be deposited into the Treasury. The bill would direct the FCC to begin the auction by the end of calendar year 2020 and to deposit the receipts into the Treasury by the end of calendar year 2022.

Other provisions of S. 2881 would require the FCC to issue rules certain taxing jurisdictions must follow to spend fees collected to support or implement 911 or enhanced 911 services.

## Estimated Federal Cost

The estimated budgetary effect of S. 2881 is shown in Table 1. The costs of the legislation fall within budget functions 370 (commerce and housing credit) and 950 (undistributed offsetting receipts).

**Table 1.**  
**Estimated Budgetary Effects of S. 2881**

	By Fiscal Year, Millions of Dollars											2020-2025	2020-2030
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
<b>Increases or Decreases (-) in Direct Spending<sup>a</sup></b>													
<b>Net Change in FCC Auction Receipts</b>													
Estimated Budget Authority	0	0	-6,700	6,100	0	0	0	0	0	0	0	-600	-600
Estimated Outlays	0	0	-11,200	7,850	2,000	750	0	0	0	0	0	-600	-600
<b>Spending for Broadband Infrastructure</b>													
Estimated Budget Authority	0	0	3,200	0	0	0	0	0	0	0	0	3,200	3,200
Estimated Outlays	0	0	65	95	480	1,120	640	255	160	160	95	1,760	3,070
<b>Total</b>													
Estimated Budget Authority	0	0	-3,500	6,100	0	0	0	0	0	0	0	2,600	2,600
Estimated Outlays	0	0	-11,135	7,945	2,480	1,870	640	255	160	160	95	1,160	2,470

FCC = Federal Communications Commission.

a. Provisions in S. 2881 with respect to 911 and enhanced 911 services would affect spending subject to appropriation, but CBO estimates those costs would not be significant.

1. The C-band includes a 280 megahertz (MHz) segment of frequencies from 3700 MHz to 4200 MHz.



## Basis of Estimate

For this estimate, CBO assumes that S. 2881 will be enacted in 2020 and that outlays for programs and activities will follow historical patterns.

### Direct Spending

S. 2881 would outline the terms and conditions for an FCC auction of licenses to use a 280 MHz section of the C-band. The FCC is reallocating that range of frequencies from satellite to terrestrial use and developing rules for compensating current users. CBO expects an auction to be held under current law before the FCC's broad auction authority expires at the end of fiscal year 2022. As required by law, except for amounts authorized to be spent without further appropriation for the administrative costs of conducting the auction, the proceeds will be deposited in the Treasury as offsetting receipts (which are recorded as reductions in direct spending).

**Estimated Net Auction Receipts Under Current Law.** CBO estimates that under current law the auction of licenses to use 280 MHz of C-band spectrum will generate net offsetting receipts totaling \$15.4 billion over the 2020-2030 period, (see Table 2). As discussed below under the heading "Estimated Auction Receipts Under S. 2881," this estimate reflects CBO's expectation that winning bidders will be willing to spend about \$32 billion to acquire such C-band licenses, but will pay less than that amount to the Treasury under current law because in order to use the licenses they will have to make payments to existing users and engage in other complex transactions that affect the value of the licenses. CBO's estimate of auction receipts under current law (\$15.4 billion) reflects the information that was available when CBO prepared its January 2020 baseline projections. CBO cannot predict how policies (for example, those regarding auction procedures, minimum bids, and other matters) that the FCC might adopt in the future would affect net proceeds from a C-band auction.

Using information about past auctions, CBO expects that the FCC will require winning bidders to compensate current users for relinquishing their rights to the frequencies. As a result, CBO estimates, bids will be reduced by the amounts bidders expect to pay after the auction for relocation costs (that is, the cost of providing alternative frequencies or services for existing users) and for incentives to encourage users to vacate the band quickly.

CBO estimates that bidders will anticipate relocation and incentive costs totaling about \$15 billion. That projection includes roughly \$5 billion for relocation expenses to cover costs incurred by satellite companies for new satellites and costs incurred to provide alternative services to thousands of Earth stations that receive the satellite signals and transmit them to consumers.<sup>2</sup> In addition, and using information on the financial outlook of the affected satellite

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2. The estimate reflects a range of projections from other sources for the cost of clearing satellite customers and launching new satellites. For example, one industry group estimated a range of \$2.5 billion to \$3.5 billion (see C-Band Alliance, letter to Marlene H. Dortch, Secretary, Federal Communications Commission, concerning an ex parte submission, GN



companies, CBO estimates that bidders will anticipate making incentive payments of between \$5 billion and \$15 billion, depending on the balance of interests between winning bidders and the satellite companies. CBO projects that negotiations will result in payments of roughly \$10 billion—an amount in the middle of that range.<sup>3</sup>

Finally, the process for moving users from the C-band is more complex than for most other bands because of the technical characteristics of satellite signals. CBO estimates that companies will reduce their gross bids by about 5 percent, or \$1.6 billion, to account for the additional uncertainty about when frequencies will be available for new terrestrial services. In total, CBO estimates that proceeds from a C-band auction under current law will be \$16.6 billion less than the estimated market value of \$32 billion.

**Table 2.**  
**CBO Estimate Increases of Direct Spending Under Current Laws and Under S. 2881**

	By Fiscal Year, Millions of Dollars					2021-2025	2021-2030
	2021	2022	2023	2024	2025		
<b>Estimated Direct Spending Under Current Law</b>							
FCC Net Auction Receipts							
Estimated Budget Authority	0	-7,700	-7,700	0	0	-15,400	-15,400
Estimated Outlays	0	-7,700	-7,700	0	0	-15,400	-15,400
<b>Estimated Direct Spending Under S. 2881</b>							
FCC Gross Auction Receipts Under S. 2881							
Estimated Authorization	0	-28,800	-3,200	0	0	-32,000	-32,000
Estimated Outlays	0	-28,800	-3,200	0	0	-32,000	-32,000
Direct Spending of Auction Receipts Under S. 2881							
Estimated Budget Authority	0	17,600	1,600	0	0	19,200	19,200
Estimated Outlays	0	9,965	3,445	2,480	1,870	17,760	19,070
Total Net Direct Spending Under S. 2881							
Estimated Budget Authority	0	-11,200	-1,600	0	0	-12,800	-12,800
Estimated Outlays	0	-18,835	245	2,480	1,870	-14,240	-12,930
<b>Net Change in Direct Spending Relative to Current Law</b>							
Estimated Budget Authority	0	-3,500	6,100	0	0	2,600	2,600
Estimated Outlays	0	-11,135	7,945	2,480	1,870	1,160	2,470

Docket No. 18-122, October 28, 2019, <https://tinyurl.com/r9cj5kz>; PDF, 89 KB). Another group estimated a total cost of \$6.1 billion (see ACA Connects, letter to Marlene H. Dortch, Secretary, Federal Communications Commission, concerning an ex parte presentation on expanding flexible use of the 3.7 to 4.2 GHz band, GN Docket No. 18-122, November 19, 2019, <https://go.usa.gov/xdBMd>; PDF, 807 KB).

3. At least one satellite company is expected to seek compensation sufficient to reduce its debts and improve its credit outlook. See Nina Trentmann, “Intelsat Names New Finance Chief as It Awaits Key Regulatory Decision,” *Wall Street Journal* (May 28, 2019), <https://tinyurl.com/sxazyf6>.



**FCC Gross Auction Receipts Under S. 2881.** CBO’s January 2020 projection of current-law receipts accounts for industry experts’ assessments of the value of licenses for the terrestrial use of the frequencies, although those assessments vary widely. Recent estimates of gross auction proceeds—the proceeds before adjusting for the cost of making the frequencies available for terrestrial use—have ranged from less than \$25 billion to \$77 billion.<sup>4</sup> CBO developed a range of estimates of potential gross proceeds that accounts for both trends in the financial and market condition of potential bidders and recent auction results. Using that analysis, CBO estimates that winning bidders probably will be willing to spend \$25 billion to \$40 billion for the licenses, with an expected value of \$32 billion over the 2022-2023 period.

**Direct Spending of Auction Receipts Under S. 2881.** S. 2881 would authorize the FCC to pay current users a portion of auction receipts; the companies acquiring the C-band licenses would no longer be liable for such costs. As a result, CBO expects, winning bids would reflect the full gross value of licenses, an estimated \$32 billion, and the FCC would spend 60 percent of those proceeds, an estimated \$19.1 billion over the 2020-2030 period and another \$130 million after 2030, for the purposes authorized by the bill.<sup>5</sup> Thus, CBO estimates, enacting S. 2881 would result in net offsetting receipts of \$12.9 billion through 2030, or \$2.5 billion less than CBO projects will be collected under current law over the 2020-2030 period.

### **Spending Subject to Appropriation**

CBO estimates that implementing S. 2881 would have a negligible effect on spending subject to appropriation over the 2021-2024 period. Using information from the FCC, CBO expects that over a period of less than a year, the agency would require six employees at approximately \$190,000 each to issue rules regarding 911 fees levied by states and to participate in an interagency working group established by the Department of Justice. Because the FCC is authorized under current law to collect fees sufficient to offset the appropriated costs of its regulatory activities each year, CBO estimates that the net cost to the FCC would be negligible, assuming appropriation actions consistent with that authority.

In addition, CBO expects that over a period of less than a year, the Justice Department would require two employees at \$185,000 each to establish the interagency working group and report to the Congress on government prosecution of 911 fee use violations by states or taxing jurisdictions.

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4. One organization recently lowered the upper range of its valuation to \$26.5 billion. See S&P Global Ratings, *2020 U.S. Telecom and Cable Outlook: Widespread Industry Changes Could Put Balance Sheets at Risk* (January 15, 2020), <https://tinyurl.com/rewesbg>. A consortium of satellite companies, however, suggested that proceeds could range from \$43 billion to \$77 billion. See C-Band Alliance, *Value of the C-Band in the U.S.: An Analysis of International Prices* (attachment to a letter to Marlene H. Dortch, Secretary, Federal Communications Commission, January 27, 2020), <https://go.usa.gov/xdBUb> (PDF, 807 KB).

5. Under S. 2881, the government would receive a larger share of incremental proceeds above \$40 billion. Although CBO expects that gross proceeds could exceed that threshold, the alternative formula probably would have no significant effect on the government’s offsetting receipts from the auction.



### Uncertainty

In estimating the effects of S. 2881, CBO had to account for several sources of uncertainty:

- CBO cannot predict the terms and conditions that will govern an auction under current law. Depending on the FCC’s final rules regarding compensation for incumbent users, minimum bids and reserve prices, and other aspects of spectrum auctions, net receipts under current law could be higher or lower than CBO has estimated.
- CBO also cannot anticipate how much prospective bidders will be willing to pay for licenses. Winning bids could be higher or lower than estimated for several reasons, including the competitiveness of an auction, the financial and strategic interests of the participants, and the degree of uncertainty surrounding the time and investments needed to make the C-band available for terrestrial use.
- Finally, CBO cannot predict when the FCC will deposit auction receipts into the Treasury. That agency should begin the auction before its authority to do so expires in 2022, but receipts could be deposited earlier or later than anticipated depending on the time needed to develop rules, conduct the auction, process applications, and address legal challenges.

### Pay-As-You-Go Considerations

The Statutory Pay-As-You-Go Act of 2010 establishes budget-reporting and enforcement procedures for legislation affecting direct spending or revenues. The net changes in outlays subject to those pay-as-you-go procedures are shown in Table 3.

**Table 3.**  
**CBO’s Estimate of the Statutory Pay-As-You-Go Effects of S. 2881, the 5G Spectrum Act of 2019, as Ordered Reported by the Senate Committee on Commerce, Science, and Transportation on December 11, 2019**

	By Fiscal Year, Millions of Dollars											2020-2025	2020-2030
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
	<b>Net Increase or Decrease (-) in the Deficit</b>												
Pay-As-You-Go Effect	0	0	-11,135	7,945	2,480	1,870	640	255	160	160	95	1,160	2,470

### Increase in Long-Term Deficits:

CBO estimates that enacting S. 2881 would not increase on-budget details by more than \$5 billion in any of the four consecutive 10-year periods beginning in 2031.

### Mandates

S. 2881 would impose intergovernmental and private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA). The bill would preempt state and local laws governing the expenditure of 911 fees and surcharges collected by state, local, and tribal taxing jurisdictions. S. 2881 also would require those taxing jurisdictions to provide information to the



FCC regarding the collection and expenditure of fees and surcharges levied for the support of 911 services. If the FCC increased fees to offset the costs associated with implementing the bill, S. 2881 would increase the cost of an existing mandate on private entities required to pay those fees. CBO estimates that the aggregate cost of the intergovernmental and private-sector mandates would not exceed the thresholds established in UMRA (\$84 million and \$168 million in 2020, respectively, adjusted annually for inflation).

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