

Questions for the Record from Chairman John Thune  
To  
Commissioner Rosenworcel

*Question 1.* Commissioner Rosenworcel, you have emphasized the importance of small-scale policy experiments to examine the impacts of new policies and laws before they are put in place on the large scale. How can policymakers use small-scale experiments to develop innovative approaches to spectrum policy?

*Answer.* Our economy now depends on a potent mix of mobility, increased broadband capacity, and the decreased cost of cloud computing, allowing us to send information anytime and anywhere. Up ahead lies the Internet of Things, where billions of machines with sensors seamlessly communicate with one another, turning today's steady stream of data into a torrential flow.

While this new digital landscape is dynamic, the traditional regulatory process is not. It can often be risk averse to new ideas. But we can overcome this risk aversion if we experiment on a smaller scale, with "sandbox" projects, before implementing ideas on a national scale.

The Commission has already begun to embrace this kind of sandbox thinking. We have tested broadcast channel sharing on towers serving television stations in Los Angeles. We have towns in Alabama and Florida that are our test cases for migration to all IP networks. We also have created an experimental spectrum licensing process to help researchers and developers tinker with our airwaves—a process that has already led to systems that support rocket launches, patient-monitoring equipment, and robotic technology for the armed forces.

I believe we also can use this approach for developing innovative ideas in spectrum policy, including ideas that facilitate the reallocation of airwaves from federal to commercial use. To do this, we could identify specific spectrum bands used by federal authorities that are ripe for repurposing through auction. We could test different ways of expediting reallocation with these bands—by providing financial incentives for speedy federal relocation, by encouraging other federal authorities with spectrum to make space for those being relocated through benefits in the Spectrum Relocation Fund, or by exempting some federal users from the Miscellaneous Receipts Act and allowing the auction of spectrum not yet fully cleared for commercial use.

*Question 2.* Commissioner Rosenworcel, you have proposed auctioning to commercial entities the right to negotiate with a particular federal agency for access to its spectrum assignment. Please explain how your proposal would operate as a practical matter. Would a reasonable alternative be to allow agencies to directly lease their excess spectrum to the private sector?

*Answer.* We need a federal spectrum policy that is based on carrots, not sticks. In other words, we need to develop a system of incentives to help free more federal spectrum for

commercial use. If we do this right, we can reward federal authorities for efficient use of spectrum in a manner where they see gain in commercial reallocation, rather than just loss.

We can do this by designing auctions of imperfect spectrum rights. These auctions would involve spectrum bands that have not fully been cleared of federal users. However, we would provide the winning bidder in such auctions with the right to negotiate directly with remaining federal users to help meet their wireless needs. This option would require adjusting the Miscellaneous Receipts Act. This law presently prevents negotiations between federal agencies and winning bidders. It also prevents provision of service or equipment from winning bidders to remaining federal users. But if we made changes to this law, we would be able to speed repurposing of our nation's airwaves and provide commercial carriers with incentives to help update federal systems that are past their prime. To do this right, however, we would have to have sufficient information about remaining federal uses at the time of auction. This information would be necessary for bidders to assess the viability of their participation in the auction, including the likelihood that they would be able to address existing federal needs and also make commercial use out of the band.

To some extent, the same kind of repurposing could be accomplished with allowing agencies to directly lease their excess spectrum to the private sector. However, the leasing approach has some problems that need to be considered. Arguably, this approach would deepen the property right of federal users in spectrum they presently hold. It also would create challenging incentives, encouraging federal authorities to hold onto their excess airwaves for leasing instead of working to help clear them for auction. In addition, commercial entities may be better positioned to develop new efficient solutions for federal users through an exemption in the Miscellaneous Receipts Act, than federal authorities themselves, who may have an institutional bias toward providing service through more limited changes to existing systems.

Questions for the Record from Senator Wicker  
To  
Commissioner Rosenworcel

*Question 1.* During your testimony, you noted the need to make sure that rural America is not left behind in the wireless revolution and that smaller carriers are more likely to deploy in rural communities. The Universal Service Fund (USF) plays a critical role in supporting existing and planned wireless services in these areas. To this point, you stated that “we are going to enhance the Mobility Fund to ensure we support small wireless providers serving in rural areas.” Congress created USF to provide reasonably comparable services to urban and rural consumers alike, and required that support be predictable and sufficient. Uncertainty regarding existing and future support can have the chilling effect of stalling deployments and potential reductions in wireless service.

What steps is the Commission taking to “enhance” the Mobility Fund, and will ongoing support through Phase II of the Mobility Fund be sufficient to support existing services in rural areas as well as continue to expand mobile broadband in rural and high-cost areas?

*Answer.* The Commission first developed the Mobility Fund in the Universal Service Fund and Intercarrier Compensation Transformation Order, which was adopted in 2011. In doing so, the agency sought to support “the universal availability of mobile networks capable of delivering mobile broadband and voice service in areas where Americans live, work, or travel.” The development of this fund has proceeded in phases—in an effort to ensure that the limited dollars available are deployed in rural areas that truly lack service and are most at risk of falling behind.

The Mobility Fund kicked off with Phase I, which offered roughly \$300 million in a one-time reverse auction to providers serving rural areas where updated wireless service was not available. This auction concluded three years ago, in September 2012.

It was followed in February 2014 by another reverse auction specifically designed to provide support for updated wireless service on tribal lands. This Tribal Mobility Phase I auction awarded approximately \$50 million in support for mobile voice and broadband service offered by providers serving tribal communities.

These efforts were followed by a rulemaking in June of 2014 seeking comment on Phase II of the Mobility Fund. This rulemaking made clear that our purpose was to “target . . . Mobility Fund Phase II on preserving and extending service in” rural areas “that will not be served by the market without governmental support.” In particular, the rulemaking

sought comment on how to ensure that our Mobility Fund Phase II is devoted to “preserving service that otherwise would not exist and expanding access to 4G LTE in those areas that the market will not serve.” I think this approach is a good one. With this next step in our Mobility Fund efforts, we should apply laser-like focus on areas that lack service and areas where updated service requires additional support. I believe the funds we have available will be sufficient to make this happen and the Commission should move forward to complete Phase II of our Mobility Fund efforts.

Questions for the Record from Senator Daines  
To  
Commissioner Jessica Rosenworcel

*Question 1.* Given that all of the spectrum that is best suited for mobility is occupied, much of it by federal users, what can we do to ensure that agencies are using spectrum efficiently and/or reallocate some of the federal spectrum for mobile broadband use?

*Answer.* Federal authorities have substantial spectrum assignments. They use their airwaves for everything from protecting our borders to keeping planes in the skies to fighting forest fires. These are critical tasks that we should support. But if we want to continue to grow our wireless economy, we need to reassess just how much of our airwaves are dedicated to these tasks and consider if there are ways to accomplish the same objectives using scarce spectrum resources more efficiently.

I believe the best way to do this is to develop a federal spectrum policy based on carrots, not sticks. In other words, we need to find ways to reward federal authorities for efficient use of their spectrum so that they see benefit in commercial reallocation—rather than just loss.

To do this, we need a series of incentives to serve as the catalyst for freeing more spectrum for commercial markets. We could begin with a valuation of all spectrum used by federal authorities, ideally developed by the Office of Management and Budget. This effort would help us develop consistent ways to reward efficiency, identify incentives for reallocation for commercial use, and better understand the opportunity cost of continued federal use.

We also could adopt a system of incentives that are straightforward and financial—under which a certain portion of the revenue from commercial auction of spectrum previously

held by federal authorities would be reserved for the federal entity releasing this spectrum. This is a complex undertaking, because agencies do not operate in a market environment and are subject to an annual budget allocation. Nonetheless, we could explore such incentives with discrete spectrum bands or agencies.

In addition, we should consider auctions of imperfect spectrum rights, which could provide the winning bidder with the opportunity to negotiate directly with the existing federal authority calling those airwaves home. This option would require adjusting some laws, like the Miscellaneous Receipts Act. This law prevents negotiations between federal agencies and winning bidders in wireless auctions. But if changes are made, the federal government could auction spectrum that is not fully cleared and allow winning bidders to negotiate directly with federal authorities remaining in the band to help meet their wireless needs. This could speed repurposing of our nation's airwaves and also help provide commercial carriers with incentives to help update federal systems that are past their prime.

Finally, we should look at the Spectrum Relocation Fund, which was created in the Commercial Spectrum Enhancement Act. Today this fund assists federal authorities with relocating their wireless functions when their spectrum is being repurposed for commercial use. But this fund also could provide incentives for more government spectrum sharing, if changes were made to reward federal users when they share their airwaves with agencies that are being relocated.

*Question 2.* While many parts of the country are gearing up for 5G, there are still parts of the U.S. where it is not possible to make a phone call wirelessly. Are there things we can do to encourage build-out and streamline infrastructure deployment in rural areas, and particularly tribal areas?

*Answer.* Yes. We can and should take steps to encourage infrastructure deployment in rural areas, including on tribal lands. This is not only the right thing to do—it is consistent with our duty to promote universal service under the law.

To encourage wireless deployment in rural areas, the Commission has taken a number of steps. These include recently revising our auction policies to include a bidding credit for rural service providers so that they can compete more effectively for spectrum in the remote communities where they serve. The Commission also has a Tribal Land Bidding Credit program to facilitate service on underserved tribal lands. In addition, for the upcoming 600 MHz auction, the Commission will offer licenses in Partial Economic Areas, which are smaller than traditional Economic Areas, and facilitate broader participation by small and rural service providers.

To encourage infrastructure deployment in rural areas, on October 17, 2014, the Commission adopted a Report and Order updating its infrastructure policies. Among other things, the Commission exempted certain wireless deployments on utility structures from review under the National Historic Preservation Act. This approach will reduce

bureaucratic hurdles that can slow infrastructure deployment, especially in rural areas with limited population.

Going forward, there are additional actions we should consider. For instance, I think we should explore incentives for wireless carriers to lease unused spectrum to rural or smaller carriers in order to expand wireless coverage in rural communities. I know this approach is under consideration in the proposed Rural Spectrum Accessibility Act. I also believe the Commission should work closely with the Advisory Council on Historic Preservation, tribes, and other stakeholders to develop a “program alternative” which could expedite deployment of small cell infrastructure under the National Historic Preservation Act. This would help facilitate the deployment of this infrastructure nationwide, but could be especially helpful in rural areas.

*Question 3.* What steps is the FCC taking to encourage wireless deployment on tribal lands?

*Answer.* Wireless deployment on tribal lands lags behind deployment elsewhere and puts residents at a clear disadvantage in an economy that is increasingly dependent on mobile connections. As a result, a variety of Commission policies have been put in place to help expedite deployment and improve wireless service in tribal communities.

For nearly a decade and a half, the Commission has had a Tribal Land Bidding Credit program, which provides incentives for wireless carriers participating in spectrum auctions to offer service on tribal lands. Today, this credit is available to any entity that secures a license at auction and deploys service to federally-recognized tribal areas where the wireline penetration rate is 85 percent or less. In order to ensure that tribal lands receive timely service, deployment covering 75 percent of the qualified tribal lands is required within three years.

More recently, in February 2014, the Commission concluded its Tribal Mobility Fund Phase I reverse auction, known as Auction 902. This auction for universal service support offered up to \$50 million in one-time funding to accelerate service on tribal lands and enhance broadband availability. To encourage tribal participation, the Commission offered a 25 percent bidding credit for tribally-owned entities participating in the reverse auction. It is my understanding that two of the winning bidders from this auction plan to provide service on tribal lands in Montana. As the agency continues to update its universal service support policies, we will need to study the impact of this auction—in Montana and elsewhere—and identify what further efforts are necessary to facilitate greater deployment on tribal lands.

In addition, the Commission has an outstanding Notice of Proposed Rulemaking seeking comment on how to promote greater use of spectrum over tribal lands—in order to improve the availability of wireless service to unserved and underserved tribal communities.