

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
ETC Annual Reports and Certifications	)	WC Docket No. 14-58
	)	
Establishing Just and Reasonable Rates for Local Exchange Carriers	)	WC Docket No. 07-135
	)	
Developing a Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	

COMMENTS OF ADTRAN, INC.

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## Summary

ADTRAN agrees with the premise of this *Further NPRM* – broadband technologies have changed, along with applications and demand for services – so that the Commission’s rate of return Connect America Fund also needs to evolve. The Commission should aim higher than merely achieving 4/1 Mbps for rural subscribers. The *Further NPRM* offers numerous means of enhancing this broadband subsidy program.

ADTRAN supports the Commission’s proposal to expand the rate of return carrier budget to account for inflation. Seven years without any increase is putting the subsidy program under strain, because upgrading, deployment and construction costs have grown over that time.

The rate of return carriers are well-positioned to quickly and economically upgrade and deploy broadband to their customers. In addition, these carriers have already established customer relationships and community partnerships, which aid in customer education (which in turn enhances customer uptake, thereby increasing efficiency). At the same time, ADTRAN does not believe that the costs and complexities of conducting a reverse auction justify the theoretical savings that might (or might not) occur. ADTRAN thus endorses the Commission’s proposal to expand the offer of A-CAM model-based support to the rate of return carriers. ADTRAN agrees with the use of a two-step offer, but urges the Commission to reserve some flexibility depending on what the Commission learns at the first step.

ADTRAN also supports the Commission’s specification of various obligations in return for that support, including requiring a minimum of 10/1 Mbps broadband service at each of the fully funded locations, along with specifying a percentage of locations to be provided 25/3 Mbps service, with that percentage varying with the service provider’s density. ADTRAN also supports the proposed milestone requirements to ensure timely deployment of new and upgraded broadband services. In addition, ADTRAN agrees with the proposed technical specifications for the subsidized services, including round trip latency of 100 Ms or less. ADTRAN, however, objects to the inclusion of a high latency option. Allowing a high latency option without the reverse auction weighting to balance the trade-off of inadequate interactive service versus lower cost could result in some rural customers receiving second-rate service without any offsetting cost savings.

Finally, ADTRAN supports the Commission’s proposal to allow greater support for Tribal areas (as previously re-defined to exclude urban areas such as Tulsa) because of the widespread low-income characteristics for such areas and the historic absence of telecommunications services. On the other hand, ADTRAN objects to the proposal to target support for low-income areas more generally, because of the difficulty of accurately determining what areas would be entitled to greater support and the network effects more broadly of ubiquitous broadband. To the extent the Commission is concerned about the affordability of broadband for low-income households, the Lifeline program can meet that goal on a much more targeted basis.

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ADTRAN, Inc. (“ADTRAN”) files these comments addressing some of the issues in the Commission’s proposal to refine the Connect America Fund (“CAF”) for rate-of-return carriers.<sup>1</sup> As explained below, ADTRAN urges the Commission to take steps that will rapidly and efficiently bring broadband to unserved and underserved customers in the territories of rate of return carriers. ADTRAN thus supports the Commission’s modest proposals in the *Further NPRM* to expand the CAF in order to ensure that these rural carriers’ customers are not left on the wrong side of the digital divide.

ADTRAN, founded in 1986 and headquartered in Huntsville, Alabama, is a leading global provider of networking and communications equipment. ADTRAN’s products enable

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<sup>1</sup> *Connect America Fund et al.*, WC Docket No. 10-90 et al., Report and Order, Third Order on Reconsideration, and Further Notice of Proposed Rulemaking, FCC 18-29, released March 23, 2018 (hereafter cited as “*Further NPRM*”).

voice, data, video and Internet communications across a variety of network infrastructures. ADTRAN's solutions are currently in use by service providers, private enterprises, government organizations and millions of individual users worldwide. ADTRAN thus brings an expansive perspective to this proceeding, as well as an understanding of the importance to individuals, communities and our country of robust and ubiquitous broadband. ADTRAN has been a strong advocate in Commission proceedings to help spur broadband deployment.<sup>2</sup> Indeed, ADTRAN has itself launched a gigabit initiative that has far surpassed its goal of facilitating the deployment of 200 gigabit communities by the end of 2015, with over 350 gigabit communities deployed by the end of 2016, and that trend has continued.<sup>3</sup>

### ***The Rate of Return CAF Program Needs to Continue to Evolve***

The Commission established the CAF to support broadband deployment for rate of return carriers program in 2011.<sup>4</sup> But much has changed in the ensuing seven years. Broadband

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<sup>2</sup> E.g., Comments of ADTRAN in WC Docket No. 17-84, filed January 17, 2018; Comments of ADTRAN in WC Docket No. 10-90, filed December 6, 2017; Comments of ADTRAN in GN Docket No. 17-199, filed September 21, 2017; Comments of ADTRAN in GN Docket No. 15-191, filed September 15, 2015; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed August 8, 2014; Comments of ADTRAN in WC Docket No. 10-90, filed March 28, 2013; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed January 18, 2012; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed April 18, 2011.

<sup>3</sup> See, *Press Release*, "ADTRAN Sets the Nation's Communities on the Path to Gigabit Transformation -- Utilities, MSOs and land developers deliver Gigabit broadband to over 350 communities," <http://phx.corporate-ir.net/phoenix.zhtml?c=67989&p=irol-newsArticle&ID=2178711>; <http://gigcommunities.net/adtran-reaches-200-gigabit-community-milestone/> ("More than 200 communities are now able to access [next-generation gigabit broadband services](#) as a result of ADTRAN's Enabling Communities, Connecting Lives program, ADTRAN announced August 11."); *Light Reading*, August 13, 2014, "Adtran Launches 'Gig Communities' Initiative," available at <http://www.lightreading.com/broadband/fttx/adtran-launches-gig-communities-initiative/d/d-id/710330>. See also, <http://gigcommunities.net/>.

<sup>4</sup> *Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing a Unified Intercarrier Compensation Regime; Federal-State Joint Board on*

technologies have continued to evolve, and demand for broadband capacity has grown in order to support new and expanded applications, including video streaming, remote health care, distance learning and video conferencing services.

As the Commission recognizes, the budget for CAF support for rate of return carriers was fixed in 2011, and not adjusted for inflation since then.<sup>5</sup> Moreover, that budget was based on providing a baseline of 4/1 Mbps broadband speeds (with some areas increased to 10/1 Mbps).<sup>6</sup> It no longer makes any sense to subsidize broadband limited to 4/1 Mbps speeds, in light of the significant changes in uses and applications over the last seven years.<sup>7</sup> Customers in rural areas need – and deserve – better broadband capabilities.

Increasing the budget to account for inflation should add opportunities for the Commission to increase the rate of return CAF subsidies sufficiently to increase the broadband speeds available to these companies' subscribers and provide service to unserved customers. Although the costs for construction and deployment of facilities have grown since 2011, the costs of electronics have not seen similar increases. Moreover, the electronics have grown more sophisticated, and new technologies have emerged that will allow for efficient upgrades of current facilities or deployment of new facilities to allow significantly higher speeds, but not at significantly higher costs.

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*Universal Service; Lifeline and Link-Up; Universal Service Reform – Mobility Fund; WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, WT Docket No. 10-208, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663 (2011).*

<sup>5</sup> *Further NPRM* at ¶ 107.

<sup>6</sup> *Further NPRM* at ¶ 108.

<sup>7</sup> *Further NPRM* at ¶ 126.

In many cases, upgrading service can be accomplished economically in light of evolving technologies. Providing fiber deeper into the network will allow service providers to take advantage of the improvements in maximizing the capabilities of embedded copper plant. Significant enhancements have been made in improving the capacity/throughput of DSL by advances such as pair bonding, VDSL2 vectoring, supervectoring and G.fast. These advances allow carriers to take full advantage of the extensive base of copper loops that currently comprise much of the telecommunications plant in service. And fixed wireless technologies are now being deployed that can support download speeds of 50 Mbps, with some fixed wireless technologies offering gigabit speeds.<sup>8</sup> Likewise, service providers currently offering broadband to their customers using fiber to the premises or cable technologies should economically be able to upgrade service from 10/1 to much higher speeds.<sup>9</sup> Such upgrades are “low hanging fruit,” such that with little relative additional investment in broadband technologies, subscribers will be able to fully participate in the benefits that robust broadband has to offer.

ADTRAN thus urges the Commission to adopt its proposal to increase the rate of return CAF budget to account for inflation from when the budget was established in 2011, and to continue increasing the budget annually based on inflation. ADTRAN agrees with the proposal to use as the measure of inflation the United States Department of Commerce’s Gross Domestic Product–Chained Price Index (GDP–CPI).<sup>10</sup> Such a measure is consistent with the Commission’s use of that inflation factor for Rural Growth Fund. And ADTRAN is unaware of

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<sup>8</sup> See, e.g., <https://www.fiercewireless.com/wireless/editor-s-corner-fixed-wireless-a-big-deal-here-s-why>.

<sup>9</sup> *Further NPRM* at ¶ 121.

<sup>10</sup> *Further NPRM* at ¶ 115.

any other index that specifically measures the costs of deploying broadband service. In addition, ADTRAN would urge the Commission to conduct an assessment after four years to determine whether the budgeted amount is sufficient (or excessive), and propose adjustments accordingly.

As the Commission recognizes, however, one of the reasons there is such pressure on limiting any increases in the budgets for any of the universal service programs, including the rate of return CAF program, is because the current plan assesses contributions based on a shrinking slice of the communications market.<sup>11</sup> ADTRAN urges the Commission to resolve the longstanding USF contribution reform proceeding to provide greater stability and flexibility to the USF programs. At present, the various USF programs are pitted against each other to vie for constrained funds, creating pressure for compromises to “share the pain” that may be unnecessary and counterproductive in the long run.

### ***Proposed Changes to the Rate of Return CAF Processes***

As explained above, ADTRAN believes that increasing the rate of return CAF budget to account for inflation will recognize the many changes in broadband usage and technologies that have occurred since the Commission set the budget back in 2011 based on bringing 4/1 Mbps broadband to rural areas.<sup>12</sup> In addition, ADTRAN supports a number of additional proposals in the *Further NPRM* that are designed to further modernize the rate of return CAF program and implement the changes. As an initial matter, ADTRAN urges the Commission to fully fund the rate of return CAF program, which is made possible by the increase in the budget to account for

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<sup>11</sup> *Further NPRM* at ¶ 112.

<sup>12</sup> *Further NPRM* at ¶ 110.



the previous failure to include an inflation adjustment. ADTRAN believes that the rate of return CAF program is the fastest and most efficient way to bring upgraded broadband services to the scattered locations in these carriers' territories. Rate of return carriers have a presence in the area already, so as to provide for rapid deployment and upgrades. In addition, these carriers have already established customer relationships and community partnerships, which aid in customer education (which in turn enhances customer uptake, thereby increasing efficiency).

While the use of a reverse auction mechanism theoretically might reduce the required subsidy amounts, any such potential gains would need to be balanced against the delays, costs and complexity of designing and running an auction (as well as the costs imposed on the auction participants).<sup>13</sup> Moreover, it is not clear how competitive any such reverse auction might be, considering that the rate of return CAF program at issue here addresses “drips and drabs” of locations scattered throughout the rate of return carriers' territories. In addition, the cost controls of the Alternative Connect America Cost Model (“A-CAM”) ensure that the Commission's broadband subsidy funds are invested efficiently. For all of these reasons, ADTRAN urges the Commission to utilize a new model offer, rather than a reverse auction, to subsidize the deployment and upgrade of broadband services in rate of return carriers' territories.

ADTRAN thus supports the *Further NPRM*'s proposal to make the rate of return carriers a new model-based offer of support that would be less than the current legacy support, but which would provide a much greater degree of certainty.<sup>14</sup> ADTRAN also supports the proposal to extend such a model-based offer of support to all rate of return carriers, not just the ones where

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<sup>13</sup> Cf., *Further NPRM* at ¶ 163.

<sup>14</sup> *Further NPRM* at ¶ 117.

the model offer would be less than the legacy support.<sup>15</sup> As explained above, the A-CAM minimizes the risk that any such subsidies would be excessive. And the use of a per location funding cap will further limit the total subsidies provided to rate of return carriers, thereby ensuring that the budget is not exceeded. At the same time, the carriers are in the best position to assess the trade-offs between certainty of funding under the legacy program and the costs of meeting the broadband deployment obligations that would accompany the model-based support. The experience to date with the price cap carriers' use of an election process for accepting model-based support suggests that it is an efficient means of accelerating broadband deployment to unserved and underserved customers.<sup>16</sup>

The *Further NPRM* also seeks comment on different methods of assigning the funding if it turns out there is a shortfall. The Commission asks whether a two-step process should be utilized to see how many of the rate of return carriers opt in to the model-based support.<sup>17</sup> Alternatively, the *Further NPRM* asks how the Commission should prioritize subsidy amounts so that areas with the lowest levels of deployment receive the limited funding.<sup>18</sup>

As a general matter, the two-step election process appeared to work well as an initial means of assessing which of the carriers would accept the trade-off of model-based support and greater certainty than relying on the legacy support system. But as the Commission's experience with that process demonstrates, the Commission should be prepared to make adjustments as it

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<sup>15</sup> *Further NPRM* at ¶ 144.

<sup>16</sup> E.g., <https://www.fiercetelecom.com/telecom/centurylink-frontier-take-lead-caf-ii-race-seek-wireless-complementary-technologies>.

<sup>17</sup> *Further NPRM* at ¶ 147.

<sup>18</sup> *Further NPRM* at ¶ 146.

gains greater knowledge. The Commission should likewise here anticipate the possibility of tweaking the second step if it turns out that small adjustments to the budget amounts would result in additional sites being served or upgraded. Moreover, the additional information provided by the first step would provide the Commission with additional information as to any budget shortfalls, and thus a need to ration the subsidy amounts to achieve particular goals. ADTRAN believes it would be premature to attempt to make such decisions in advance, without knowing the scale of any such shortfalls.

The *Further NPRM* also proposes to make use of the additional funding resulting from the modification to the budget to provide carriers who accepted the earlier offer the fully funded amount, with a cap of \$200 per location.<sup>19</sup> ADTRAN supports this proposal. This will expand the number of customer locations that will be served by higher broadband speeds, at a relatively low incremental expansion of the rate of return carriers model-based broadband subsidy budget. This will also minimize the risk that these customers would “fall through the cracks” and be left with sub-standard broadband service.

The *Further NPRM* proposes to incorporate broadband deployment obligations on any of the new rate of return carriers that accept the offer of model-based support.<sup>20</sup> ADTRAN supports the adoption of the requirements that the carriers support 10/1 Mbps to all “fully funded,” locations, and 25/3 Mbps to a percentage of those locations, depending on density. The proposed minimum standard of 10/1 Mbps for fully funded locations allow the household to engage in remote health care monitoring, Internet surfing/research, video calling, job seeking (and job

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<sup>19</sup> *Further NPRM* at ¶ 143.

<sup>20</sup> *Further NPRM* at ¶¶ 131-132.

training), and closing the “homework gap.” ADTRAN also supports the schedule under which such deployment must occur.<sup>21</sup> These minimum obligations will ensure that the broadband subsidies will result in measurable enhancements to the broadband capabilities available to customers in these rural territories.

ADTRAN also agrees that the Commission needs to specify technical parameters for the broadband services.<sup>22</sup> To the extent the rate of return CAF program would be paying some of the costs of the subsidized broadband service, the Commission has a legitimate interest in ensuring that the services provided with those subsidies can fulfill the intended purposes, and that the services that are delivered comport with what was promised. Setting minimum standards is essential to ensuring that the expanded program is successful and efficient.

In addition to specifying the minimum transmission speeds, ADTRAN also urges the Commission to adopt the other quality parameters proposed in the *Further NPRM*.<sup>23</sup> While the speed/throughput is a critical factor in the users’ experience, it is not the only factor that determines whether the rural household will be able to use the services and applications made possible by the subsidized broadband service. The latency associated with the network connection is equally important, and in many cases more so, for interactive applications requiring response times that should be perceived by the user as instantaneous, such as VoIP calling. Even for non-real time applications such as web browsing, small additions to network latency can have a multiplicative effect that results in latency, and not speed, frequently being

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<sup>21</sup> *Further NPRM* at ¶ 135.

<sup>22</sup> *Further NPRM* at ¶ 134.

<sup>23</sup> *Ibid.*

the dominant factor in web page download times. Thus, ADTRAN supports the proposal to adopt a latency standard of 95% or more of round trip latency measures must be 100 ms or less.

ADTRAN objects to the proposal in the *Further NPRM* to include a “high latency” option in this rate of return carrier broadband subsidy program. In the CAF Phase II auction context, the Commission recognizes that there is a trade-off between the potential for cost savings from use of geostationary satellites, and the functionality of the service that is provided. As noted above, for some services the delay makes a very noticeable difference. In CAF Phase II, the Commission thus included a weighting factor to account for that trade-off. There is no similar mechanism to account for that trade-off in this context.

The *Further NPRM* also proposes some changes to the USF subsidy program for the rate of return carriers that do not elect to receive model-based support. One such proposal would be to reduce the monthly limit on subsidies from \$250 down to \$200.<sup>24</sup> The Commission asserts that such a reduction may be warranted based on the limited number of petitions for waiver to allow amounts above that limit (and the fewer number of such petitions granted). On the other hand, the absence of waiver petitions could also reflect the costs and uncertainties surrounding and such request, compared to the shortfall the service providers face. ADTRAN urges the Commission not to try to read too much into the absence of waiver requests. Further lowering the ceiling could spur significantly more petitions, because the shortfall would be greater, and more carriers would be affected by the lower ceiling.

The *Further NPRM* also proposes to combine the current high-cost support programs into one support stream as being simpler to administer and providing the carriers with more flexibility.<sup>25</sup>

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<sup>24</sup> *Further NPRM* at ¶ 159.

<sup>25</sup> *Further NPRM* at ¶ 165.

ADTRAN agrees that it makes sense to simplify the support programs, given the importance of fostering broadband deployment and the need to implement efficiencies wherever possible. Broadband should not be treated as an “add-on” to voice, but part and parcel of the critical services to be supported by the USF. The market has evolved significantly since Congress directed the Commission to subsidize voice services in 1996, and the high-cost support programs should reflect those changes.

The *Further NPRM* also seeks comment on changes to the model-based support for Tribal areas to reflect the lower income levels and lower take rates associated with these customers.<sup>26</sup> ADTRAN concurs with this proposal. Tribal lands (as re-defined to exclude urban areas such as Tulsa and Reno<sup>27</sup>) face unique problems with very low density and very low incomes, so that a failure to provide adjustments to the model-based support would lead to lower adoption rates, thus exacerbating the economic barriers. The proposed adjustments to the model-based support, combined with the Commission’s action to increase Lifeline subsidies for Tribal customers, should help end the digital divide that now exists on Tribal lands.

The *Further NPRM* also seeks comment on whether the high-cost program should be modified more generally so that it also targets low income areas.<sup>28</sup> ADTRAN recognizes that conquering the digital divide also requires efforts to improve broadband adoption by lower income households. But ADTRAN believes that the most efficient and targeted means of doing so would be to enhance the Lifeline program to address this issue directly. It is not clear how the Commission would determine “low-income” areas, because the territories served by rate of

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<sup>26</sup> *Further NPRM* at ¶ 120.

<sup>27</sup> *USF/ICC Transformation Order*, 26 FCC Rcd at 17663, 17711, n.197 (2011).

<sup>28</sup> *Further NPRM* at ¶ 166.

return carriers may include pockets of low-income and higher income households. Moreover, given the network effects of broadband deployment, everyone benefits from ubiquitous broadband deployment. ADTRAN thus suggests that the Commission not attempt to target high-cost support to low income areas.<sup>29</sup>

## Conclusion

ADTRAN applauds the Commission's efforts to continue to refine the USF program to help speed the deployment of broadband services to unserved and underserved customers in the territories of rate of return carriers. ADTRAN believes that the modest changes to the broadband subsidy program advocated herein will rapidly and efficiently result in more and better broadband in rural America. ADTRAN urges the Commission to adopt these modifications to best serve the public interest.

Respectfully submitted,

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<sup>29</sup> In contrast, ADTRAN believes that an exception is warranted for Tribal lands, given the historical problems with deploying all communications services to these territories, and the widespread low-income status.