

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
Establishing Just and Reasonable Rates for Local Exchange Carriers	)	WC Docket No. 07-135
	)	
High-Cost Universal Service Support	)	WC Docket No. 05-337
	)	
Developing an Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
Lifeline and Link-Up	)	WC Docket No. 03-109

**REPLY COMMENTS of ADTRAN, Inc.**

ADTRAN, Inc. (“ADTRAN”) files these Reply Comments in response to several of the comments filed on the Commission’s proposals to modify its high cost, universal support and intercarrier compensation rules to account for changes in technology and policies as broadband becomes ever more important.<sup>1</sup> In its Comments in this proceeding, ADTRAN supported the Commission’s efforts to modernize and refocus the universal service funding program to subsidize the deployment of broadband services. The current system, focused on circuit-

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<sup>1</sup> *Connect America Fund*, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking (NPRM) in WC Docket No. 10–90, GN Docket No. 09–51, WC Docket No. 07–135, WC Docket No. 05–337, CC Docket No. 01–92, CC Docket No. 96–45, and WC Docket No. 03–109, FCC 11–13, adopted February 8, 2011, and released February 9, 2011 (76 Federal Register 11632, March 2, 2011)(hereafter cited as “*Connect America Fund NPRM*”).

switched voice technology, fails to capture the efficiencies and benefits of packet-based broadband networks that are rapidly supplanting the older technology. Indeed, the current system in some respects discourages the deployment of newer, better technologies. A wide variety of other commenters joined ADTRAN in supporting the Commission's proposals to expand universal service funding of broadband services.<sup>2</sup>

### **The Subsidy Program Must be Technology Neutral**

In designing the details of the broadband subsidy program, ADTRAN concurred with the Commission's proclamations that such support must be "technology neutral." ADTRAN explained, however, that aspirations to technology neutrality are not enough – the rules must adopt technical requirements (including measurement techniques and standards) that do not unfairly favor any particular technology. The requirements should be both service-specific (*i.e.*, mobile and fixed broadband) and technology-neutral. That is, fixed and mobile broadband services can be specified with legitimately different requirements. However, the requirements for a given service must be met without any special consideration for the type of access technology used to provide that service.

And while other commenters also supported the notion of technology neutrality, some of those commenters advocated a "lower bar" for particular technologies, which is inconsistent with neutrality. For example, CTIA (at pp. 33-35) urged the Commission not to adopt "arbitrary speed thresholds," asserting that

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<sup>2</sup> *E.g.*, Comments of Windstream, Public Knowledge, Frontier Communications, Comcast, CenturyLink, AT&T, Verizon, Telecommunications Industry Association, United States Telecom Association.

CTIA conducted its own speed test across multiple wireless devices and carriers in 2010, which demonstrated that, in a single three minute period, there can be as much as a 97 percent drop in speed followed by a 1200 percent increase in speed, even without movement by the consumer. Such drastic variability in mobile broadband speed cannot realistically be captured in data submitted as part of mandatory universal service reporting obligations. The mobile nature of wireless broadband services provides remarkable utility to consumers, but, as the Commission has acknowledged, mobile wireless broadband is particularly susceptible to factors that may affect speed, and that are not present in wireline networks.<sup>3</sup>

Likewise, Sprint in its Comments argued that

The Commission also should be cautious about setting minimum "actual" speeds because it is difficult to maintain consistent mobile broadband speeds, as available bandwidth can vary for many reasons beyond the carrier's control, *e.g.*, the amount of traffic on a tower at any given time, environmental factors such as weather or foliage, the extent to which the user is on the move (and thus is being transferred from cell site to cell site) or remains in one location, the user's distance from the cell site, the type of handset or device used, and the type of activity being conducted (large versus small file transfers). For these reasons, making eligibility for CAF support dependent on a rigid measure of "speed" would likely discriminate heavily in favor of fixed networks at the expense of mobile broadband carriers.<sup>4</sup>

In a similar vein, T-Mobile asserted that the "speed of mobile networks may vary at different points in time, as the capacity per user is largely dependent upon the number of other users in a given sector, as well as other factors," and then urged the Commission to adopt a definition of broadband that takes account of these attributes of mobile broadband.<sup>5</sup>

Instead of adopting lower standards to accommodate the limitations of mobile broadband, ADTRAN urges the Commission to specify the minimum requirements based on how broadband services are and will be used, with emphasis on the requirements associated with classes of broadband applications utilized and the traffic volumes generated by such uses. Taking these

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<sup>3</sup> CTIA Comments at pp. 33-34 (footnotes omitted).

<sup>4</sup> Sprint Comments at pp. 40-41.

<sup>5</sup> T-Mobile Comments at p. 9.

“real world” factors into account, ADTRAN recommends that “broadband” for purposes of the expanded subsidy program be defined as rates of 4 Mbps in the downlink direction and 768 kbps in the uplink direction. These rates enable all of the widely used classes of broadband applications, while maximizing the benefit of limited subsidy funding across as many consumers as possible. ADTRAN also recommends a number of additional characteristics with regard to the regulations governing subsidized deployments:

- Rates should be defined and measured at the transport layer.
- Performance should be sustainable. It should support a continuous stream of traffic at the target rate.
- Performance should be reliable. It should meet or exceed the target rate a high percentage of the time when measured during the busy hour.<sup>6</sup>
- One-way latency (excluding jitter) should be no more than 50 ms.
- Limitations (if any) on traffic volume should be appropriate for the type of service. Any limitations on volume should not affect more than a small percentage of the users of a given service

A “technology neutral” set of rules would incorporate these standards, and would allow any technology that meets these standards to qualify, whether it is fiber-based, copper-based, hybrid fiber-coax or wireless.<sup>7</sup> In contrast, a service that provides the minimum speeds only if the

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<sup>6</sup> Cf., Windstream at p. 16: “Windstream supports the National Broadband Plan’s recommendation that the Commission adopt an initial universalization target of 4 Mbps *actual download speed*.” (emphasis added)

<sup>7</sup> The marketplace, through the use of a bidding mechanism, would determine which of these technologies would be the most efficient in any particular deployment. T-Mobile (at pp. 5-6) claimed that “Moreover, the Omnibus Broadband Initiative Technical paper (that supported the analysis in the NBP) confirmed that wireless would be the least-costly technology to serve 90 percent of the unserved households in the U.S.” ADTRAN has elsewhere detailed the flaws in that model. *E.g.*, ADTRAN Ex Parte in GN Docket No. 09-51, filed May 28, 2010.

subscriber is located within a few hundred feet of the tower, if there is clear weather, and only if no other subscribers are on-line, while presumably within an “up to” measure of 4 Mbps, should not be deemed “broadband” for purposes of the Connect America Fund.

ADTRAN does recognize the value of mobility with respect to Internet access services, and that mobility may require some sacrifice of these other important characteristics. ADTRAN thus supports the Commission’s proposal to use \$100 million to \$300 million from the Universal Service Fund to create a new Mobility Fund.<sup>8</sup> Such a separate Mobility Fund (with its own standards for supported services) could support advanced mobile wireless services in areas that otherwise would lack these services, without needing to “dumb down” the “broadband” services supported by the Connect America Fund.

### **The Commission Should Reject Calls for Extraneous Regulatory Burdens**

A few of the commenters seek to inject extraneous regulatory issues into this Connect America Fund proceeding that are pending in other proceedings. The Commission should ignore such pleas. For example, Google (at p. 16) requested that “recipients of USF subsidies should be required to use CAF funding to enhance the robustness of broadband access services, and be barred from using such funds to support private or specialized services (such as pay IPTV video services) that are distinct from broadband Internet access.” However, “specialized” or “private” services are both desired by customers and beneficial. For example, remote medical monitoring services would presumably be considered “specialized” services. It simply makes no sense to deny or discourage these presently unserved families or businesses from receiving access to such valuable services. Moreover, Google’s proposal would introduce a host of difficult and arbitrary

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<sup>8</sup> *Universal Service Reform - Mobility Fund NPRM*, 25 FCC Rcd 14716 (2010) at ¶ 5.

cost allocation issues in any attempt to segregate investments and expenses for “broadband access services” from “private or specialized services.”

Google (at pp. 16-17) likewise insisted that “the FCC should mandate that all providers of broadband Internet access, whether fixed or mobile, that receive CAF funding for broadband deployment and/or operational support commit to providing services over networks that are open, transparent, and not subject to discriminatory acts of the broadband network owner.” ADTRAN has previously detailed how the Commission’s “net neutrality” rules are unnecessary, vague and counterproductive insofar as they will discourage new broadband investment.<sup>9</sup> Moreover, to the extent the Commission imposes any such rules, they should be applied on an industry-wide basis. Should those rules be struck down by the courts, it makes no sense to impose those obligations only on the narrow field of Internet Service Providers that happen to get subsidies from the Connect America Fund. Such asymmetric application of the rules would adversely affect competition, without providing whatever widespread benefits the Commission’s “net neutrality” rules were intended to produce. Thus, ADTRAN urges the Commission to decline Google’s attempt to expand the “net neutrality” rules in this Connect America Fund proceeding.

Google (at p. 17) also asked the Commission to “condition the availability of CAF support upon the offering of wholesale access to broadband networks on reasonable terms”. This suggestion, too, introduces a whole new set of complications, including who would determine whether the rates were “reasonable” and what standards, if any, would be applied in making such determinations. As demonstrated by the history of the “UNE-P” experiences, the disputes,

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<sup>9</sup> See ADTRAN Comments in GN Docket No. 09-191, filed January 14, 2010.

contentiousness and litigation that would accompany any such requirement would inevitably create delays, uncertainty and significant wasted resources. The Commission should reject this request of Google, as well.

Level 3 (at p. 22) proposes that “the Commission should annually dedicate a portion of the CAF specifically to middle-mile, rather than last-mile, projects.” As part of the National Broadband Plan initiative, the Commission thoroughly examined the need for and cost of subsidization of “last mile” facilities, and determined that such subsidies were necessary. They did not reach that same conclusion with regard to “middle mile” facilities, concluding only that the “FCC should examine middle-mile costs and pricing.”<sup>10</sup> “Examine” is not the same as “dedicating a portion of the CAF” as advocated by Level 3. And in its comments in this proceeding, Level 3 presented no new analysis of the economics of “middle mile” deployment to demonstrate that any particular portion of a necessarily limited Connect America Fund should be dedicated to subsidizing “middle mile” deployment.<sup>11</sup>

In contrast to Level 3, Sprint (at p. 37) argues that the Commission should not subsidize “middle mile” costs, asking instead that the Commission should require reductions in special access rates to TELRIC (Total Element Long Run Incremental Cost), the cost standard adopted by the Commission that applies to unbundled network elements. While ADTRAN does agree with Sprint that it has not been demonstrated that there is a need for the Connect America Fund to subsidize “middle mile” costs, ADTRAN urges the Commission not to bring the

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<sup>10</sup> National Broadband Plan, Chapter 8.

<sup>11</sup> For example, to the extent that satellite may be used to provide Internet access service for some of the most remote, highest cost customers, the satellite broadband would comprise both the “last mile” and “middle mile” facilities.

complications and controversy surrounding special access pricing into this proceeding. As discussed above, there is no evidence of a widespread “middle mile” problem that needs resolving, and certainly no evidence in the record that TELRIC pricing of special access would resolve any such problems.

As detailed in its initial comments in this proceeding, the Commission can best serve the public interest by reforming the current subsidy system to support the deployment of broadband services in a technology neutral manner. The Commission should reject efforts to favor particular technologies, or to introduce complicated, extraneous issues into this proceeding as suggested by a few of the initial commenters.

Respectfully submitted,

ADTRAN, Inc.

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