

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

In the Matter of )  
 )  
Expanding the Economic and Innovation ) GN Docket No. 12-268  
Opportunities of Spectrum Through Incentive )  
Auctions )

REPORT AND ORDER

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By the Commission:

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## I. INTRODUCTION

1. This Order adopts rules to implement the broadcast television spectrum incentive auction. The incentive auction is a new tool authorized by Congress to help the Commission meet the Nation’s accelerating spectrum needs.<sup>1</sup> Broadcasters will have the unique financial opportunity in the “reverse

<sup>1</sup> See Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, §§ 6402 (codified at 47 U.S.C. § 309(j)(8)(G)), 6403 (codified at 47 U.S.C. § 1452), 126 Stat. 156 (2012) (Spectrum Act); *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, Notice of Proposed Rulemaking, 27 FCC Rcd 12357, 12368, paras. 25-26 (2012) (NPRM). The NPRM provided an overview of broadcast television and other services that occupy the broadcast television bands, the Commission’s historical efforts to meet America’s spectrum needs and Congress’s call for more broadband spectrum in the Spectrum Act, as well as the statute’s incentive auction provisions. See *id.* at 12362-72, paras. 11-34.

auction” phase of the incentive auction to return some or all of their broadcast spectrum usage rights in exchange for incentive payments.<sup>2</sup> By facilitating the voluntary return of spectrum usage rights and reorganizing the broadcast television bands, we can recover a portion of ultra-high frequency (“UHF”) spectrum for a “forward auction” of new, flexible-use licenses suitable for providing mobile broadband services.<sup>3</sup> Payments to broadcasters that participate in the reverse auction can strengthen broadcasting by funding new content, services, and delivery mechanisms. And by making more spectrum available for mobile broadband use, the incentive auction will benefit consumers by easing congestion on the Nation’s airwaves, expediting the development of new, more robust wireless services and applications, and spurring job creation and economic growth.

2. Our central objective in designing this incentive auction is to harness the economics of demand for spectrum in order to allow market forces to determine its highest and best use. We are also mindful of the other directives that Congress established for the auction, including making all reasonable efforts to preserve, as of the date of the passage of the Spectrum Act, the coverage area and population served of remaining broadcast licensees.<sup>4</sup> The auction affords a unique opportunity for broadcasters who wish to relinquish some or all of their spectrum rights, but we emphasize that a broadcaster’s decision to participate in the reverse auction is wholly voluntary. We are committed to removing barriers to this voluntary participation. In particular, the reverse auction in which broadcasters will have the opportunity to return spectrum rights will be transparent and easy to participate in.<sup>5</sup> In the descending clock auction format we choose, for example, a broadcaster need only decide whether it is willing to accept one or more prices offered to it as the reverse auction proceeds; if at any point the broadcaster decides a price is too low, it may drop out of the reverse auction.<sup>6</sup> No station will be compensated less than the total price that it indicates it is willing to accept.<sup>7</sup>

3. The auction presents a once-in-a-lifetime opportunity for broadcasters, and we are committed to providing them with information about both our process and the financial opportunity the auction represents to enable them to make informed business decisions about whether and how to participate. We have conducted numerous workshops and other direct outreach efforts.<sup>8</sup> We also have developed the Learn Everything About Reverse Auctions Now (“LEARN”) program to provide useful

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<sup>2</sup> Spectrum Act § 6403(a)(1) (mandating “a reverse auction to determine the amount of compensation that each broadcast television licensee would accept in return for voluntarily relinquishing some or all of its broadcast television spectrum usage rights in order to make spectrum available for assignment through a system of competitive bidding under subparagraph (G) of section 309(j)(8) of the Communications Act of 1934, as added by section 6402.”); *see* § IV.B (Reverse Auction).

<sup>3</sup> Spectrum Act § 6403(c)(1) (A) (requiring the FCC to conduct a “forward auction” to assign licenses for the use of spectrum reallocated from broadcast television as part of the incentive auction); *see* § IV.C (Forward Auction).

<sup>4</sup> Spectrum Act § 6403(b)(2).

<sup>5</sup> *See* § IV.B (Reverse Auction).

<sup>6</sup> *See* § III.B.1 (Repacking Process Overview); Spectrum Act § 6403(b).

<sup>7</sup> *See* para. 453.

<sup>8</sup> *See, e.g., FCC Announces Panelists for September 30, 2013, Workshop on Issues Surrounding the Reassignment of TV Stations After the Incentive Auction*, GN Docket No. 12-268, Public Notice, 28 FCC Rcd 13805 (2013); *FCC Announces Details for June 25, 2012 TV Broadcaster Relocation Fund Workshop*, GN Docket No. 12-268, News Release, 2012 WL 1965368 (rel. June 1, 2012); *FCC Announces Details for May 22, 2012 Channel Sharing Workshop*, GN Docket No. 12-268, News Release, 2012 WL 1524622 (rel. May 1, 2012). In addition, the Media Bureau conducted a series of webinars regarding the incentive auction for State Broadcasters Associations in 2011 and 2012. Moreover, representatives of the Media Bureau have spoken at a number of conferences about the incentive auction since the enactment of Spectrum Act, including, among others, National Association of Broadcasters (NAB) Shows, Association of Public Television Stations (APTS) Public Media Summits, and National Alliance of State Broadcasters Associations (NASBA) Winter Meetings.

information and resources.<sup>9</sup> We anticipate offering demonstrations of the auction bidding system, interactive tutorials, and other opportunities for broadcasters to familiarize themselves with the reverse auction application and bidding processes in advance of the reverse auction. We also recognize the importance of broadcasters that choose not to participate in the reverse auction. To free up a portion of the UHF spectrum band for new, flexible uses, Congress authorized the Commission to reorganize the broadcast television spectrum so that the stations that remain on the air after the incentive auction occupy a smaller portion of the UHF band.<sup>10</sup> The reorganization (or “repacking”) approach we adopt will avoid unnecessary disruption to broadcasters and consumers and ensure the continued availability of free, over-the-air television service.

4. Ultimately, our actions will benefit consumers of telecommunications services. While minimizing disruption to broadcast television service, we seek to rearrange the UHF spectrum in order to increase its potential to support the changing needs of 21<sup>st</sup> Century consumers. We recognize that the same individuals may be consumers of television, mobile broadband—using both licensed and unlicensed spectrum—and other telecommunications services. To benefit such consumers, and consistent with the framework of the Spectrum Act, we have strived for balance in our decision-making process between television and wireless services, and between licensed and unlicensed spectrum uses.

5. We adopt a “600 MHz Band Plan” for new services in the reorganized UHF spectrum. By maximizing the spectrum’s value to potential bidders through features such as paired five megahertz “building blocks,” the Band Plan will help to ensure a successful auction. By accommodating variation in the amount of spectrum we recover in different areas, which depends on broadcaster participation and other factors, the Band Plan will ensure that the repurposing of spectrum for the benefit of most consumers nationwide is not limited by constraints in particular markets.<sup>11</sup> The Band Plan will promote competition and innovation by creating opportunities for multiple license winners and for future as well as current wireless technologies. Because it is composed of a single band of paired spectrum blocks only, our Band Plan also simplifies the forward auction design. We adopt for new licensees flexible-use service rules, and technical rules similar to those governing the adjacent 700 MHz Band, an approach that should speed deployment in the 600 MHz Band. Devices will be required to be interoperable across the entire new 600 MHz Band.

6. Our repacking methodology will ensure an efficient television channel assignment scheme while avoiding unnecessary disruption to broadcasters and consumers. Repacking presents a complex engineering problem that must be solved repeatedly during the course of the reverse auction bidding process: namely, how to determine which channels to assign to stations that will stay on the air, consistent with statutory requirements, as well as the technical requirements that we establish.<sup>12</sup> For the incentive auction to succeed, we need a methodology capable of solving the problem quickly and with certainty as the reverse auction bidding proceeds. Our repacking methodology will address these needs by simplifying the problem. During the reverse auction bidding process, provisional channel assignments that satisfy applicable requirements will be identified, ensuring that a feasible channel is available for every station that remains on the air. After the reverse auction bidding ends, final channel assignments will be optimized to strive for additional goals, such as minimizing relocation costs for broadcasters

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<sup>9</sup> See <http://www.fcc.gov/learn>.

<sup>10</sup> See Spectrum Act § 6403(b)(1) (requiring the FCC, in order to “mak[e] available spectrum to carry out the forward auction,” to “evaluate the broadcast television spectrum,” and authorizing it, “subject to international coordination . . .,” to “make such reassignments of television channels as the Commission considers appropriate” and “reallocate such portions of such spectrum as the Commission determines are available”).

<sup>11</sup> Under this framework, we can generally make available for new uses the amount of spectrum we recover in most top markets, while offering different amounts in constrained markets (such as those that border Canada and Mexico) where we may recover less spectrum. See § III.A.2.d (Market Variation).

<sup>12</sup> See § III.B.1 (Repacking Process Overview).

assigned to new channels. This approach will meet the practical requirements of conducting a successful auction without sacrificing other objectives.

7. Our repacking approach will also fulfill Congress’s mandate to use “all reasonable efforts to preserve,” as of the date of the passage of the Spectrum Act, the coverage area and population served of each remaining broadcast licensee.<sup>13</sup> In particular, our approach will ensure that each station serves essentially the same viewers that it served before the incentive auction, and that no station causes more than a minimal (0.5 percent) amount of new interference to another station.<sup>14</sup> The statutory mandate covers facilities operating as of February 22, 2012, but we will extend the same protection to certain facilities authorized after that date, having determined that the benefits of doing so outweigh the potential costs to our flexibility in reorganizing the broadcast television spectrum.<sup>15</sup>

8. In addition to repurposing UHF spectrum for new licensed uses, the rules we adopt in this Order will make a significant amount of spectrum available for unlicensed use, a large portion of it on a nationwide basis.<sup>16</sup> Unlicensed devices complement licensed services, serve a wide range of consumer needs, and contribute tens of billions of dollars to our economy annually. To prevent harmful interference between licensed services, our 600 MHz Band Plan includes a number of guard bands, which we intend to make available for use by unlicensed devices. Moreover, we will allow unlicensed use of channel 37, and allow television white space (“TVWS”) devices as well as wireless microphones to operate on any unused television channels following the incentive auction. We also intend to designate one unused channel in each area following the repacking process for shared use by wireless microphones and TVWS devices.

9. To facilitate broadcaster participation, we are striving for simplicity in designing the reverse auction. Broadcasters will be able to participate online through an easy-to-use computer interface. They will have several bid options, including relinquishing their licenses, moving to a lower band, and sharing a channel. The descending clock format to collect bids will enable broadcasters to gain information during the bidding, and will not require them to reveal how much compensation they ultimately would accept; they need indicate only whether they accept the opening price and—if so—any subsequent prices. If at any point a broadcaster decides prices are too low, it may drop out of the auction. No station will be compensated less than the total price that it indicates it is willing to accept. We will evaluate and select bids in conjunction with the repacking process, based on their potential impact on the recovery of spectrum and other factors. We will keep the identity of broadcasters that participate confidential, and that period of confidentiality will extend for two years after the incentive auction, except for winning bidders.<sup>17</sup>

10. For the incentive auction to succeed, the reverse auction and the repacking process must work seamlessly with the forward auction of new, flexible-use 600 MHz Band licenses. We are designing the forward auction for speed, so that reverse auction participants need not await its outcome for weeks or months. In particular, by conducting bidding for generic or interchangeable spectrum blocks rather than specific frequencies, we can condense the time required for bidding significantly. We establish a final stage rule to assure that the forward auction raises enough proceeds to satisfy the minimum proceeds

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<sup>13</sup> See Spectrum Act § 6403(b)(2) (requiring “all reasonable efforts to preserve, as of the date of the enactment of this Act, the coverage area and population served of each broadcast television licensee, as determined using the methodology described in OET Bulletin 69”).

<sup>14</sup> See § III.B.2 (Implementing the Statutory Preservation Mandate).

<sup>15</sup> See § III.B.3 (Facilities to Be Protected); Spectrum Act § 6403(b)(2).

<sup>16</sup> See § III.C (Unlicensed Operations).

<sup>17</sup> See § IV.B.1 (Reverse Auction Pre-Auction Process); Spectrum Act § 6403(a)(3) (requiring “all reasonable steps necessary to protect the confidentiality of Commission-held data of a licensee participating in the reverse auction . . . , including withholding the identity of such licensee until the [spectrum] reassignments and reallocations (if any) . . . become effective”).

requirements that we establish, but bidding will continue as long as demand for wireless licenses in any area exceeds the number available in that area.<sup>18</sup> In the *Mobile Spectrum Holdings Report and Order* adopted today, we establish a market-based spectrum reserve in the forward auction designed to ensure against excessive concentration in holdings of low-band spectrum, and we adopt certain secondary markets limitations regarding 600 MHz Band licenses.<sup>19</sup>

11. Following the conclusion of the incentive auction, the transition to the reorganized UHF band will be as rapid as possible without causing unnecessary disruption. Television stations that voluntarily turn in their licenses or agree to channel share must transition from their pre-auction channels within three months of receiving their reverse auction payments.<sup>20</sup> The time required for stations reassigned to a new channel to modify their facilities will vary, so we will tailor their construction deadlines to their situations.<sup>21</sup> This approach will ensure that stations transition as quickly as their circumstances allow, and allow coordination of deadlines where, for example, one station must vacate a channel before another can begin operating on its new channel. No station will be allowed to operate on a channel that has been reassigned or repurposed more than 39 months after the repacking process becomes effective.<sup>22</sup> In other words, the repurposed spectrum will be cleared no later than 39 months after the effective date. Most new licensees should have access to 600 MHz spectrum well before then. Consistent with Congress's mandate, we also establish procedures to reimburse costs reasonably incurred by stations that are reassigned to new channels, as well as by multichannel video programming distributors to continue to carry such stations.<sup>23</sup>

12. As Congress recognized, the incentive auction and the transition that follows require coordination with our cross-border neighbors, Canada and Mexico.<sup>24</sup> Because of these common borders, the Commission has established processes and agreements to protect television and wireless operations in border areas from harmful interference. The FCC staff has used these processes to fully inform Canadian and Mexican officials regarding the incentive auction and, beginning in 2013, formed technical groups to meet routinely to plan for harmonious use of the reorganized UHF band following the incentive auction. Commission leadership has supplemented these efforts, meeting with their Canadian and Mexican counterparts to emphasize the need for and mutual benefits of harmonization. We are confident that the long and successful history of close cooperation with Canada and Mexico regarding the use of radio spectrum along our common borders will continue before, during, and after the incentive auction.

13. We intend to conduct the broadcast television spectrum incentive auction as soon as possible. We must proceed deliberately, however, as the auction will be the first of its kind. We also are committed to an open, transparent process with meaningful public input. The Commissioners and staff have engaged in significant public discourse throughout the course of this proceeding. In addition to the

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<sup>18</sup> See § IV.C.2 (Forward Auction Bidding Process).

<sup>19</sup> See *Policies Regarding Mobile Spectrum Holdings*, WT Docket No. 12-269, Report and Order, FCC 14-63 (adopted May 15, 2014) (*MSH Report and Order*).

<sup>20</sup> See § V.C.2.b (Transition Procedures for Winning License Relinquishment and Channel Sharing Bidders).

<sup>21</sup> See § V.C.2.a (Construction Period for Stations with New Channel Assignments). We note that no broadcaster will be required to relocate its transmission facilities. Stations that are reassigned to new channels will have to modify their facilities to operate on the new channels, however.

<sup>22</sup> See *id.* Thirty-nine months includes the thirty-six month construction period provided under current FCC rules, plus three months between the effective date—when the repacking process results are announced—and the deadline for stations to file construction permit applications to modify their facilities.

<sup>23</sup> See Spectrum Act § 6403(b)(4)(A); § V.C.5 (Reimbursement of Relocation Costs).

<sup>24</sup> See Spectrum Act § 6403(b) (authorizing such reassignments of television channels as the Commission considers appropriate, and reallocation of such spectrum as it determines is available for reallocation, subject to international coordination along the border with Mexico and Canada).

usual comment and reply process, the record reflects more than 400 *ex parte* meetings, numerous public notices and workshops on specific incentive auction-related issues, and a series of Incentive Auction Task Force presentations at Commission open meetings, which have provided critical input for the decisions we make today. These decisions provide the essential framework for the incentive auction. But they will not, by themselves, enable us to implement the incentive auction. Based on the framework we establish today, we will develop the detailed procedures necessary to govern the auction process, which will be based on additional record input on the remaining, narrower set of important issues, such as auction design and issues arising from our decision to accommodate market variation in the 600 MHz Band Plan.<sup>25</sup>

14. Our experience with spectrum auctions over the past 20 years supports our conclusion that the public interest is best served by acting now to establish the basic framework for the incentive auction, and thereafter resolving discrete outstanding issues and adopting final auction procedures, through a process that allows additional public input and concludes well in advance of the auction itself. The Commission's past practice has been to first establish general rules governing spectrum license auctions in reports and orders, and then specific requirements through public notices that provide the opportunity for comment by interested parties, including on critical matters such as bid collection, assignment, and payment procedures and final stage rule. This approach has worked well, and a similar one is all the more necessary for the incentive auction due to its novelty and complexity. Consistent with this approach, today's Order determines many of the significant elements of the incentive auction, which are set forth in the following Executive Summary.

15. In the coming months, the Commission will solicit public input on final auction procedures by Public Notice ("*Incentive Auction Comment PN*" or "*Comment PN*"). This Public Notice will include specific proposals on crucial auction design issues such as opening prices, factors for setting reverse auction prices, and how much market variation to accommodate in the 600 MHz Band Plan. Well in advance of the auction, also by Public Notice, the Commission will resolve these implementation issues, and provide detailed explanations and instructions for potential auction participants ("*Incentive Auction Procedures PN*" or "*Procedures PN*").<sup>26</sup> We do not modify the Wireless Telecommunications Bureau's ("WTB" or "Wireless Bureau") well-established authority to adopt final auction procedures through a pre-auction public notice process.<sup>27</sup> Compared to our typical spectrum auctions, many aspects of the broadcast television spectrum incentive auction are unique, and in this proceeding we intend to establish certain procedures by Commission vote. The WTB may continue to establish final auction procedures in this proceeding concerning those matters that it typically handles under existing delegations of authority.

16. The Commission will resolve outstanding issues that fall outside the rubric of the *Comment PN* and the *Procedures PN*, including a methodology for preventing co- and adjacent channel interference between television and wireless services in certain areas, and proposals for an aggregate cap on interference to television stations in the repacking process,<sup>28</sup> through a separate process that will conclude in advance of decisions on the final auction procedures. The discussion that follows identifies such issues that are not being resolved in this Order and, where appropriate, delegates authority to one or more of the Commission's Bureaus and Offices to resolve those issues in accordance with our decisions.

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<sup>25</sup> See §§ III.A.2.d (Market Variation), IV.A (Overview and Integration of the Reverse and Forward Auctions), IV.B.2 (Reverse Auction Bidding Process), IV.C.2 (Forward Auction Bidding Process).

<sup>26</sup> We refer generally to the "pre-auction process" in this Order, which includes the *Comment PN* and *Procedures PN*. We may seek comment on, and/or resolve, certain final auction procedures in separate public notices if doing so better conduces to the proper dispatch of business. See 47 U.S.C. § 154(j). Any such public notices will be released during the pre-auction process and well in advance of the auction.

<sup>27</sup> See 47 C.F.R. § 0.131(c).

<sup>28</sup> See § III.B.2.d (Preserving Population Served).



## II. EXECUTIVE SUMMARY

17. *600 MHz Band Plan.* We adopt a 600 MHz Band Plan with specific paired uplink and downlink bands, comprised of five megahertz “building blocks.” We find that specific uplink and downlink bands that support Frequency Division Duplex (“FDD”) technologies are best suited for the new 600 MHz Band at the present time in light of current technology, the Band’s propagation characteristics, and potential interference issues present in the Band; and that offering paired spectrum blocks will best facilitate the rapid deployment of networks, including by smaller carriers and new entrants. The uplink portion of the Band will begin at channel 51 (698 MHz) and expand downward, followed by a duplex gap and then the downlink portion of the Band. The Band Plan can accommodate variation in the amount of spectrum recovered in different geographic areas in order to prevent the “least common denominator market” from limiting the quantity of spectrum we can offer generally across the nation.<sup>29</sup>

18. In addition, the Band Plan we adopt incorporates technically reasonable guard bands, including the duplex gap, to prevent harmful interference between licensed services.<sup>30</sup> We adopt Partial Economic Areas (“PEAs”) as the service area for the 600 MHz Band, finding that PEAs permit entry by providers that contemplate offering wireless broadband service on a localized basis, yet may be easily aggregated by carriers that plan to provide service on a larger geographic scale. Consistent with the Spectrum Act’s directives, we also adopt “flexible use” service rules for the 600 MHz Band.<sup>31</sup>

19. *Repacking the Broadcast Television Bands.* In reorganizing the television bands to make spectrum available to carry out the forward auction, the FCC must “make all reasonable efforts to preserve, as of [February 22, 2012], the coverage area and population served of each broadcast television licensee, as determined using the methodology described in OET Bulletin 69 of the Commission’s Office of Engineering and Technology” (“OET-69”).<sup>32</sup> We interpret this mandate to require that we strive to preserve full power and Class A stations’ existing service as of that date without sacrificing the objectives of the incentive auction. While we will use the methodology described in OET-69 to determine the coverage area and population served of each station, we must update the computer software and input values used to implement that methodology. Among other things, doing so will ensure that our software is capable of the rapid, complex calculations necessary to support the reverse auction and the repacking process, and that we are relying on the most accurate population and other data available. We will protect full power stations’ coverage areas based on their “service areas,”<sup>33</sup> and protect the coverage areas of Class A stations, which do not have “service areas” under FCC rules or OET-69, based on their “protected contours.”<sup>34</sup> Rather than merely attempting to preserve the same total population served by each station, we will make all reasonable efforts to preserve the same specific viewers it served as of

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<sup>29</sup> If the 600 MHz Band Plan could not accommodate some market variation, we would be forced to limit the amount of spectrum offered across the nation to what is available in the most constrained market (the “least common denominator”), even if more spectrum could be made available in the vast majority of the country. See § III.A.2.d (Market Variation).

<sup>30</sup> See § III.A.2.e (Guard Bands). The size of the guard band between 600 MHz downlink and television depends on how much spectrum is repurposed through the incentive auction. The duplex gap will be 11 megahertz, and the potential size of the guard band between 600 MHz downlink and television is seven to 11 megahertz. If 84 megahertz or more is repurposed, there will be a three-megahertz guard band or bands between 600 MHz operations and channel 37. See *id.*; § III.D.1 (Channel 37 Services).

<sup>31</sup> See § VI.B.2 (600 MHz Band Service Rules); Spectrum Act § 6402 (granting incentive auction authority “to permit the assignment of new initial licenses subject to flexible-use service rules”).

<sup>32</sup> Spectrum Act § 6403(b)(2).

<sup>33</sup> See § III.B.2.c (Preserving Coverage Area); 47 C.F.R. § 73.622(e); OET-69 at 1.

<sup>34</sup> See § III.B.2.c (Preserving Coverage Area); 47 C.F.R. § 73.6010.

February 22, 2012. We will not allow any channel assignments that, considered on a station-to-station basis, would reduce a station's population served by more than a *de minimis* (0.5 percent) amount.<sup>35</sup>

20. *Television Facilities to Be Protected in the Repacking Process.* As Congress required, we will protect full power and Class A facilities that already were operating pursuant to a license (or a pending application for a license to cover a construction permit) on February 22, 2012.<sup>36</sup> We also exercise our discretion to protect facilities in addition to those the statute requires us to protect, based on consideration of the potential impact on our flexibility in the repacking process and our auction goals, whether failing to protect would strand investment by broadcasters licensed on a primary basis, the loss of service to existing viewers, and the potential impact on the Class A service's digital transition. In particular, we will protect:

- the small number of new full power television stations that were authorized, but not constructed or licensed, as of February 22, 2012;
- full power facilities authorized in construction permits issued to effectuate a channel substitution for a licensed station;
- modified facilities of full power and Class A stations that were authorized by construction permits granted on or before April 5, 2013, the date the Media Bureau issued a freeze on the processing of certain applications; and
- minor change facilities authorized to implement Class A stations' mandated transition to digital operations.<sup>37</sup>

21. Except in very limited circumstances, we will limit discretionary protection to the above categories. We conclude that protecting other categories of facilities, including low power television ("LTPV") stations and television translator ("TV translator") stations, which are secondary in nature and are not entitled to protection from primary services under our current rules, would unduly constrain our flexibility in the repacking process and undermine the likelihood of meeting our objectives for the incentive auction. To help preserve the important services provided by LPTV and TV translator stations, we will open a special filing window for such stations that are displaced to select a new channel and will amend our rules to expedite the process for displaced stations to relocate. We also intend to initiate a rulemaking proceeding after the release of this Order to consider additional means to mitigate the potential impact of the incentive auction and the repacking process on LPTV and TV translator stations.

22. *Unlicensed Operations.* We will make the 600 MHz Band guard bands available for unlicensed use, thereby making spectrum available for unlicensed devices nationwide. Depending on the amount of spectrum repurposed through the incentive auction, we will make a total of 14 to 28 megahertz of guard band spectrum available for unlicensed use. In addition, we will make an additional six megahertz of spectrum available by allowing unlicensed use of channel 37 at locations where it is not in use by channel 37 incumbents, subject to the development of the appropriate technical parameters to protect the incumbent Wireless Medical Telemetry Service ("WMTS") and Radio Astronomy Service ("RAS") from harmful interference.<sup>38</sup> Following the incentive auction and the post-auction transition,

<sup>35</sup> We will resolve proposals for an additional, aggregate cap on interference to television stations through a separate process that will conclude in advance of decisions on the final auction procedures. *See* § III.B.2.d (Preserving Population Served).

<sup>36</sup> *See* § III.B.3 (Facilities to Be Protected); Spectrum Act § 6403(b)(2).

<sup>37</sup> *See* § III.B.3 (Facilities to Be Protected); In order to ensure that we have a largely static view of the facilities that will be protected in advance of the repacking process, we generally will limit our discretionary protection to facilities constructed and licensed on or before a Pre-Auction Licensing Deadline to be announced by the Media Bureau. We anticipate that the Public Notice will give stations at least 90 days prior notice of this deadline.

<sup>38</sup> *See* § III.C (Unlicensed Operations). We will initiate a separate rulemaking proceeding to establish technical rules for unlicensed operations in the guard bands and on channel 37.

TVWS devices may continue to operate on channels allocated and assigned for primary television services, consistent with our current rules.<sup>39</sup> We anticipate that there will be at least one channel not assigned to a television station in all areas at the end of the repacking process,<sup>40</sup> and we intend, after additional notice and opportunity for public input, to designate one such channel in each area for shared use by wireless microphones and TVWS devices. We expect a significant amount of spectrum to be available for continued TVWS use, particularly outside of the central urban areas of the largest television markets.<sup>41</sup> Any other unused television channels in a market following the incentive auction will also be available for TVWS device as well as wireless microphone use. We will initiate a rulemaking proceeding after the release of this Order to consider changes to our existing Part 15 rules to facilitate unlicensed use of the television bands, 600 MHz Band guard bands and channel 37.

23. *Other Services.* We will not relocate the WMTS or the RAS from channel 37. To protect these incumbent services from harmful interference, in the 600 MHz Band Plan we adopt guard bands between such services and any new wireless broadband services that may be deployed adjacent to channel 37. Furthermore, we will require coordination with existing RAS facilities so that any new wireless systems can be deployed to cover the broadest area possible with minimal impact to RAS observatories. We will continue to license fixed broadcast auxiliary service (“BAS”) operations on a secondary basis in the post-auction TV bands.

24. We adopt measures to facilitate wireless microphone use of available spectrum in the reorganized UHF band. With regard to the 600 MHz Band guard bands, we will allow broadcasters and cable programming networks to operate licensed wireless microphones in a portion of the duplex gap, and permit users generally to operate wireless microphones in the guard bands on an unlicensed basis.<sup>42</sup> We will initiate a proceeding to adopt technical standards to govern these uses.<sup>43</sup> With regard to the remaining television spectrum, while there may no longer be two unused channels for wireless microphones in markets where those channels are currently used for that purpose, as noted above we intend to designate one unused channel in each area following the auction for use by wireless microphones and TVWS devices. We also revise our rules for co-channel operations in the post-auction television bands to expand the areas where wireless microphones may operate. We will continue to permit wireless microphone users of unused television channels to register to obtain needed protection from unlicensed TVWS devices on such channels through the TV bands database registration system, which we plan to improve to make protection more timely and effective. In a companion item that we adopt today, we extend to certain unlicensed wireless microphone users the rights of licensed wireless microphone users.<sup>44</sup> We will also initiate a proceeding in the near future to find additional spectrum for wireless microphone users in other spectrum bands in order to help address their long-term needs.

25. *Incentive Auction Process: Integration of the Reverse and Forward Auctions.* The reverse and forward auctions will be integrated in a series of stages. Each stage will consist of a reverse

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<sup>39</sup> See generally 47 C.F.R. Part 15; § III.C (Unlicensed Operations).

<sup>40</sup> See III.C (Unlicensed Operations). For engineering reasons, there may be a few areas with no spectrum available in the television bands for unlicensed devices and wireless microphones to share.

<sup>41</sup> TVWS devices may continue to operate in portions of the UHF band that will be repurposed until a 600 MHz Band licensee commences operations, and in portions designated for guard band use.

<sup>42</sup> See § III.D.3 (Low Power Auxiliary Stations and Unlicensed Wireless Microphones). Wireless microphones may operate throughout the 600 MHz Band during the Post-Auction Transition Period. See § V.D.4 (Transition Procedures for Low Power Auxiliary Stations (LPAS) and Unlicensed Wireless Microphones).

<sup>43</sup> See § III.C (Unlicensed Operations).

<sup>44</sup> *Revisions to Rules Authorizing the Operation of Low Power Auxiliary Stations in the 698-806 MHz Band*, WT Docket No. 08-166, WT Docket No. 08-167, ET Docket No. 10-24, Second Report and Order, \_\_ FCC Rcd \_\_ (2014) (adopted May 15, 2014) (*Wireless Microphones Second Report and Order*).

auction and a forward auction bidding process, and additional stages will be run if necessary. Prior to the first stage, the initial spectrum clearing target will be determined. Broadcasters will indicate through the pre-auction application process their willingness to relinquish spectrum usage rights at the opening prices. Based on broadcasters' collective willingness, the initial spectrum clearing target will be set. Then the reverse auction bidding process will be run to determine the total amount of incentive payments to broadcasters required to clear that amount of spectrum. The forward auction bidding process will follow the reverse auction bidding process. If the final stage rule is satisfied, the forward auction bidding will continue until there is no excess demand, and then the incentive auction will close. If the final stage rule is not satisfied, additional stages will be run, with progressively lower spectrum targets in the reverse auction and less spectrum for licenses available in the forward auction, until the rule is satisfied.

26. The final stage rule is a reserve price with two components, both of which must be satisfied. The first component requires that the average price per MHz-pop<sup>45</sup> for licenses in the forward auction meets or exceeds a certain price per MHz-pop benchmark. Alternatively, if the spectrum clearing target at a particular stage is greater than a spectrum clearing benchmark, then the first component will be met if the total proceeds of the forward auction exceed the product of the same price benchmark, the spectrum clearing benchmark, and the total number of pops for those licenses.<sup>46</sup> This alternative formulation will allow the auction to close if the incentive auction repurposes a relatively large amount of spectrum for wireless uses, even if the price per-MHz-pop is less than the benchmark price. The price and spectrum clearing benchmarks will be established by the Commission in the *Procedures PN*, after an opportunity for additional comment. The second component of the final stage rule requires that the proceeds of the forward auction be sufficient to meet mandatory expenses set forth in the Spectrum Act<sup>47</sup> and any Public Safety Trust Fund amounts needed in connection with FirstNet. If the requirements of both components of the reserve price are met, then the final stage rule is satisfied.<sup>48</sup>

27. *Reverse Auction Eligibility and Bid Options.* Full power and Class A station licensees will be eligible to participate in the reverse auction. They may bid to voluntarily relinquish the spectrum usage rights associated with station facilities that are eligible for protection in the repacking process. Licensees with pending enforcement matters whose bids may result in their holding no broadcast licenses may participate under a streamlined escrow approach that is consistent with current practice in the sales context. Bidders will have the three bid options specified by the Spectrum Act: (1) license relinquishment; (2) reassignment from a UHF to a VHF channel; and (3) channel sharing. UHF-to-VHF bidders may limit their bids to a high (channels 7 to 13) or low (channels 2 to 6) VHF channel. We will favorably consider post-auction waiver requests involving winning UHF-to-VHF and high-VHF-to-low-VHF bidders' technical operations. Bidders will have the additional option to bid for reassignment from a high VHF channel to a low VHF channel. Channel sharing bidders may propose licensed community changes if they cannot satisfy signal coverage requirements from their new transmitter sites, provided that

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<sup>45</sup> The term "MHz-pop" is defined as the product derived from multiplying the number of megahertz associated with a license by the population of the license's service area.

<sup>46</sup> The operation of the final stage rule, including the alternative formulation of the first component, is explained in detail below in § IV.A (Overview and Integration of the Reverse and Forward Auctions). In the pre-auction process, we will consider whether to apply the final stage rule solely to "major markets" and, if so, how to identify such markets. This approach could significantly speed up the determination of whether the final stage rule is satisfied.

<sup>47</sup> The Spectrum Act requires that the forward auction generate proceeds sufficient to pay winning bidders in the reverse auction and cover relevant administrative costs of the auction and an estimate of relocation costs subject to reimbursement. See Spectrum Act § 6403(c)(2).

<sup>48</sup> We note that the first and second components are not cumulative: the auction need not raise sufficient proceeds to satisfy the first *plus* the second.

the new communities meet the same allotment priorities as the current ones and are located in the same Designated Market Areas (“DMAs”).<sup>49</sup>

28. *Reverse Auction Pre-Auction Process.* Potential bidders will have to submit certified applications.<sup>50</sup> Consistent with the Spectrum Act, we will protect the identity of licensees that apply to participate in the reverse auction.<sup>51</sup> Specifically, we will maintain the confidentiality of information submitted by all licensees that apply to participate until the results of the reverse auction and the repacking process are announced. We will maintain the confidentiality of information on non-winning bids for an additional two years. Confidential information will include licensees’ names, channels, call signs, facility identification numbers, network affiliations, and any other information necessary to protect licensees’ identities.

29. Between the short-form application filing deadline and the announcement of the results of the reverse auction and the repacking process, all full power and Class A licensees will be prohibited from communicating directly or indirectly any reverse or forward auction applicant’s bids or bidding strategies to any other full power or Class A licensee or forward auction applicant.<sup>52</sup> Recognizing that many broadcasters are not familiar with auction processes, we intend to make education regarding the pre-auction application process, including the scope of the prohibition of certain communications, an important part of our broadcaster outreach efforts.

30. *Reverse Auction Bidding Process.* We adopt a descending clock format for the reverse auction. In each bidding round, stations will be offered prices for one or more bid options and will indicate their choices at these prices. The prices offered to each station for options will be adjusted downward as the rounds progress in a way that accounts for the availability of television channels in different bands in the repacking process.<sup>53</sup> “Intra-round bidding” will enable bidders to indicate price levels (between the opening- and closing prices in a round) at which they would like to either choose different bid options or drop out of the auction and remain in their home bands. A station will continue to be offered prices for bid options until the station’s voluntary relinquishment of rights becomes needed to meet the current spectrum clearing target. When all remaining active bidders are needed in this way, the reverse auction for the stage will end. If the final stage rule is satisfied in that stage, then the active bidders are winning bidders, and the price paid to each will be at least as high as the last price it agreed to accept.

31. *Forward Auction Pre-Auction Process.* At this time we adopt the same size-based bidding credits for the forward auction as the Commission applied in auctioning 700 MHz Band spectrum: 15 percent for small businesses (defined as entities with average annual gross revenues for the

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<sup>49</sup> The Commission’s television allotment priorities implement the policy goals of § 307(b) of the Communications Act. 47 U.S.C. § 307(b). See § IV.B.1.b.iii (Bid Options/Channel Sharing Bid).

<sup>50</sup> Potential channel sharers need not submit applications (only sharees), but must certify regarding their channel sharing agreements. “Sharer” refers to a licensee that agrees to share its channel with another licensee, but does not bid to relinquish spectrum usage rights to its channel in the reverse auction. “Sharee” refers to a licensee that bids to relinquish spectrum usage rights to its channel in the auction to share a different channel with another licensee.

<sup>51</sup> See Spectrum Act § 6403(a)(3) (“The Commission shall take all reasonable steps necessary to protect the confidentiality of Commission-held data of a licensee participating in the reverse auction . . . , including withholding the identity of such licensee until [the repacking process has] become effective . . .”).

<sup>52</sup> The prohibition will apply to all controlling interest holders in the licensee, and all directors and officers of the licensee. The prohibition will not apply to communications between (a) licensees that share a common controlling interest, director or officer (and between a licensee and a forward auction applicant that have similar overlapping interests) and (b) parties to a channel sharing agreement that is disclosed on a reverse auction application. See § IV.B.1.c (Confidentiality and Prohibition on Certain Communications).

<sup>53</sup> The more potential for interference a station has, the more assigning it a channel is likely to limit the availability of channels for other stations, increasing the likely value of its bid to voluntarily relinquish spectrum usage rights.

preceding three years not exceeding \$40 million) and 25 percent for very small businesses (defined as entities with average annual gross revenues for the preceding three years not exceeding \$15 million).<sup>54</sup> Soon we will initiate a separate proceeding to review our Part 1 designated entity rules. As part of that proceeding, we will consider whether any revisions made to the rules should apply to the incentive auction. Forward auction applicants will be subject to our existing Part 1 competitive bidding rules, with modifications we adopt today that, among other things, provide for the selection of generic licenses and prohibit communications with full power and Class A licensees during the auction process.

32. *Forward Auction Bidding Process.* We adopt an ascending clock auction format for the forward auction. Bidders will be able to bid for generic licenses in one or more categories. Intra-round bidding will be allowed. There will be a separate clock price for each category in each geographic area, and bidders will indicate the number of licenses that they demand at the current prices. The prices generally will rise from round to round, as long as the demand for licenses exceeds their availability. Bidders still demanding licenses when the clock prices stop rising in every license category in every area will become winners of those licenses, provided the final stage rule is satisfied. If the rule is not satisfied, those bidders will have an opportunity to make additional bids in an extended bidding round. Once the rule is satisfied, winners may indicate their preferences for frequency-specific licenses in an assignment round or a series of separate bidding rounds. Final license prices will reflect the winning bid amounts from the clock bidding rounds as well as any adjustments from the extended bidding and assignment rounds.<sup>55</sup>

33. *Completion and Effective Dates/Processing of Bid Payments.* Reverse and forward auction “completion,” required for the repacking process to become effective,<sup>56</sup> will occur when the Commission publicly announces that the incentive auction has ended.<sup>57</sup> The repacking process will be “effective,” triggering Commission authority to borrow up to \$1 billion from the U.S. Treasury to use toward the payment of relocation costs, when the results of the reverse and forward auctions and the repacking process are announced. We anticipate that the completion and effectiveness announcements will occur simultaneously. As soon as the auction is complete and the repacking process effective, we anticipate borrowing some or all of the available \$1 billion from the Treasury for reimbursement of relocation costs. We will share forward auction proceeds with licensees that relinquish rights in the reverse auction as soon as practicable following the successful conclusion of the incentive auction.<sup>58</sup>

34. *Post-Auction Transition.* A public notice will mark the effective date of channel reassignments based on the repacking process and specify any specific channel assignments for television stations that will continue to broadcast. Reassigned stations will have three months to file construction permit applications for any minor changes to their facilities necessary to operate on their new channels. Stations also may request alternate channels or expanded facilities on their new channels. Following the three-month application filing deadline, stations will have up to 36 months to transition to their new channels. Stations will be assigned deadlines within that period tailored to their individual circumstances. Stations may request extensions of time to construct their new facilities, but no station will be allowed to continue operating on a reassigned or reallocated channel more than 39 months after the repacking process becomes effective. Licensees that successfully bid to turn in their licenses or to share a channel will have three months from their receipt of auction proceeds to cease operations on their pre-auction

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<sup>54</sup> See § IV.C.1.b (Bidding Credits).

<sup>55</sup> See § IV.C.2 (Forward Auction Bidding Process).

<sup>56</sup> Spectrum Act § 6403(f)(2).

<sup>57</sup> See § V.A (Auction Completion and Effective Date of the Repacking Process).

<sup>58</sup> See § V.B (Processing of Bid Payments). We will distribute auction proceeds as they become available.

channels. We also adopt transition requirements for LPTV and TV translator stations, BAS operations, wireless microphones and related services.<sup>59</sup>

35. *Reimbursement of Relocation Costs.* We adopt procedures to reimburse costs reasonably incurred by television stations that are reassigned to new channels in the repacking process, as well as by MVPDs to continue to carry such stations, from the \$1.75 billion Reimbursement Fund established by Congress for that purpose.<sup>60</sup> Under these procedures, we intend to issue eligible stations and MVPDs an initial allocation of funds, in designated individual accounts in the United States Treasury, to cover the majority of their estimated costs. The funds will be available for draw down as expenses are incurred. Additional funds will be allocated as necessary prior to the three-year statutory deadline for all reimbursements. We delegate authority to the Media Bureau to establish a list of eligible expenses and estimated costs, and to calculate the amount of the allocations to eligible entities.<sup>61</sup> We adopt measures to minimize administrative burdens and to prevent waste, fraud, and abuse in the reimbursement process.

36. *Post-Auction Broadcast Regulatory Issues.* We will grandfather existing broadcast station combinations that otherwise would no longer comply with the media ownership rules as a result of the reverse auction. We concur with commenters that we should conduct extensive outreach to broadcasters, including minority- and female-owned broadcasters, to ensure that they are fully informed about the incentive auction. The Commission already has made significant efforts to inform broadcasters about the process, and we intend to continue and expand those efforts. To provide guidance to licensees interested in channel sharing and to promote certainty regarding channel sharing relationships following the incentive auction, we will require that channel sharing agreements include certain key provisions regarding licensee rights and responsibilities.<sup>62</sup>

37. *600 MHz Band Technical and Service Rules.* We adopt for new 600 MHz Band licensees flexible use service rules under Part 27 of our rules, and technical rules similar to those governing the adjacent 700 MHz Band in order to speed deployment while protecting incumbent 700 MHz Band licensees from harmful interference. We will require mobile devices to be interoperable across the entire 600 MHz Band. We will require new 600 MHz Band licensees to build out to 40 percent of the population in their service areas within six years and to 75 percent of the population by the end of their initial license terms of 12 years.<sup>63</sup> Subsequent license terms will be 10 years.

### III. THE REORGANIZED UHF BAND

38. The current UHF band consists of 228 megahertz of spectrum divided into 38 six megahertz channels that are primarily licensed to broadcast television service.<sup>64</sup> In the Spectrum Act, Congress authorized the Commission to reorganize the UHF band so that the television stations that will remain on the air after the incentive auction occupy a smaller portion of the band, thereby freeing up a

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<sup>59</sup> See § V.D (Transition Procedures for Other Services and Unlicensed Operations).

<sup>60</sup> See Spectrum Act § 6403(b)(4)(A); § V.C.5 (Reimbursement of Relocation Costs).

<sup>61</sup> In lieu of reimbursement, stations also may request service rule waivers to make flexible use of their spectrum in order to provide non-broadcast services, as long as they continue to broadcast at least one TV program stream. See Spectrum Act § 6403(b)(4)(B); see § V.C.5.e (Service Rule Waiver in Lieu of Reimbursement).

<sup>62</sup> See § VI.A.2 (Channel Sharing Operating Rules). We also address in § VI.A.2 termination and assignment or transfer of channel sharing licenses, sharing by stations operating on channels reserved for NCE operations, sharing between full power and Class A stations, the carriage rights of sharing stations, and other issues related to channel sharing relationships.

<sup>63</sup> If a licensee fails to meet its interim build-out benchmark, its initial license term will be shortened to 10 years. See § VI.B.2 (License Term, Performance Requirements, Renewal Criteria, and Permanent Discontinuance of Operations).

<sup>64</sup> See *NPRM*, 27 FCC Rcd at 12362-66, paras. 12-22.

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**For Immediate Release****FCC ADOPTS NEW RULES FOR THE 6 GHz BAND, UNLEASHING  
1,200 MEGAHERTZ OF SPECTRUM FOR UNLICENSED USE*****Commission Provides a Boost to Wi-Fi and Other Unlicensed Uses  
While Protecting Incumbent Services in the Band***

WASHINGTON, April 23, 2020—The Federal Communications Commission today adopted rules that make 1,200 megahertz of spectrum in the 6 GHz band (5.925–7.125 GHz) available for unlicensed use. These new rules will usher in Wi-Fi 6, the next generation of Wi-Fi, and play a major role in the growth of the Internet of Things. Wi-Fi 6 will be over two-and-a-half times faster than the current standard and will offer better performance for American consumers. Opening the 6 GHz band for unlicensed use will also increase the amount of spectrum available for Wi-Fi by nearly a factor of five and help improve rural connectivity.

The 6 GHz band is currently populated by, among others, microwave services that are used to support utilities, public safety, and wireless backhaul. Unlicensed devices will share this spectrum with incumbent licensed services under rules crafted to protect those licensed services and enable both unlicensed and licensed operations to thrive throughout the band.

The Report and Order authorizes indoor low-power operations over the full 1,200 megahertz and standard-power devices in 850 megahertz in the 6 GHz band. An automated frequency coordination system will prevent standard power access points from operating where they could cause interference to incumbent services.

The Further Notice of Proposed Rulemaking seeks comment on a proposal to permit very low-power devices to operate across the 6 GHz band to support high data rate applications including high-performance, wearable, augmented-reality and virtual-reality devices. The notice also seeks comment on increasing the power at which low-power indoor access points may operate.

Unlicensed devices that employ Wi-Fi and other unlicensed standards have become indispensable for providing low-cost wireless connectivity in countless products used by American consumers. In making broad swaths of the 6 GHz spectrum available for unlicensed use, the FCC envisions new innovative technologies and services that will deliver new devices and applications to American consumers and advance the Commission's goal of making broadband connectivity available to all Americans, especially those in rural and underserved areas.



Action by the Commission April 23, 2020 by Report and Order and Further Notice of Proposed Rulemaking (FCC 20-51). Chairman Pai, Commissioners O’Rielly, Carr, Rosenworcel, and Starks approving and issuing separate statements.

ET Docket No. 18-295; GN Docket No. 17-183

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*This is an unofficial announcement of Commission action. Release of the full text of a Commission order constitutes official action. See MCI v. FCC, 515 F.2d 385 (D.C. Cir. 1974).*

STATEMENT OF  
CHAIRMAN AJIT PAI

Re: *Unlicensed Use of the 6 GHz Band, Expanding Flexible Use in Mid-Band Spectrum Between 3.7 GHz and 24 GHz*, ET Docket No. 18-295 and GN Docket No. 17-183.

The coronavirus pandemic has temporarily changed nearly every aspect of our lives. Most notably, of course, millions of American adults and children are staying at home. Many of those households have multiple connected devices; parents and kids may be using laptops, tablets, and smartphones, all at the same time. That might generate friction, but for the magic of the unlicensed airwaves—better known to most as Wi-Fi. For many of us, Wi-Fi has helped keep us connected to our families and friends, as well as the outside world. It enables children to take part in distance learning while their parents participate in video conferences for work. It allows Americans with medical issues to have virtual doctor’s appointments while those they live with stream *Tiger King* on Netflix.<sup>1</sup> In short, sheltering in place would be a lot more difficult without Wi-Fi.

Of course, even before anyone had heard of COVID-19, Wi-Fi already carried more than half of the Internet’s traffic, and offloading mobile data traffic to Wi-Fi was vital to keeping our cellular networks from being overwhelmed. In a very real sense, Wi-Fi is the fabric that binds together all our digital devices.

And Wi-Fi will be even more important in the years to come. By one estimate, the economic value created by Wi-Fi in the United States is projected to double by 2023—reaching nearly \$1 trillion.

To realize that potential, we need faster, stronger Wi-Fi networks. The good news is that the next generation of Wi-Fi, commonly called Wi-Fi 6, has already started rolling out. Wi-Fi 6 will be over two-and-a-half times faster than the current standard, and it will offer better performance for connected devices. But in order to fully take advantage of the benefits of Wi-Fi 6, we need to make more mid-band spectrum available for unlicensed use. It’s been a long, long time since we did that—and consumers deserve it.

So today, we take a bold step to increase the supply of unlicensed spectrum: we’re making the entire 6 GHz band—a massive 1,200 megahertz test bed for innovators and innovation—available for unlicensed use. By doing this, we are effectively increasing the amount of mid-band spectrum available for Wi-Fi by almost a factor of five. This will be a huge benefit to consumers and innovators across the nation. Wi-Fi NOW’s Claus Hetting, a champion of Wi-Fi innovation, said it perfectly: “The truth is that this 6 GHz spectrum boost will launch the Wi-Fi industry into a new growth trajectory. It will boost Wi-Fi’s massive indoor dominance. And surely—with the help of emboldened entrepreneurs everywhere—it will bring low-cost Wi-Fi (and unlicensed) connectivity to places where it has never been.”

Ultimately, I expect that 6 GHz unlicensed devices will become a part of consumers’ everyday lives. And I predict the rules we adopt today will play a major role in the growth of the Internet of Things, connecting appliances, machines, meters, wearables, smart televisions, and other consumer electronics, as well as industrial sensors for manufacturing. At the same time, our approach will ensure that incumbents in the 6 GHz band are protected from harmful interference. The microwave services that already use this band are critical to the operations of utilities, public safety, and wireless backhaul operations. And we are ensuring that those incumbents are protected by requiring the use of automated frequency coordination systems, which will only allow new standard-power operations in areas that will not cause interference to incumbent services, and by placing conservative power limits on low-power indoor operations.

Our decision today will also help us meet the mandate set forth by Congress in RAY BAUM’S Act to make more spectrum available for unlicensed use. It is part of our aggressive and balanced

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<sup>1</sup> I admit nothing. But it may be surmised that I have an opinion about Carole.

spectrum strategy: push more licensed and unlicensed spectrum into the commercial marketplace, including a mix of low-band, mid-band, and high-band spectrum. And freeing up this spectrum for unlicensed use will also help advance our nation's leadership in 5G technologies. In fact, Cisco projects that 59% of mobile data traffic will be offloaded to Wi-Fi by 2022. And cellular operators will have a chance to augment their 5G mobile broadband services by using the 6 GHz band; 3GPP Release 16 will include a 5G New Radio specification for unlicensed, called 5G NR-U. In sum, the gain here to unlicensed users will also be a gain for their licensed counterparts.

In addition to the Report and Order, today's Further Notice of Proposed Rulemaking explores possibilities for very low power devices in the 6 GHz band. Very low power devices could enable a new and innovative generation of personal area network technologies with low latency, high capacity, and all-day battery life. These very low power devices could include accessibility technology for Americans with disabilities, virtual reality gaming, augmented reality glasses, in-vehicle systems, and other emerging technologies which we can only now dream of. We look forward to compiling a robust record and acting quickly to make 6 GHz available for these very low power uses.

Our decision today benefited greatly from the extensive comments in the record and feedback from a variety of stakeholders. In particular, I'd like to thank broadcasters, wireless Internet service providers, cable operators, content distributors, public safety entities, utilities, and all the various industries that engaged in these issues in good faith and provided constructive feedback on our proposals. In order for the future of the 6 GHz band to be successful, we will need to see continued cooperation and constructive engagement from all these stakeholders.

I'd also like to thank all our hardworking FCC staff. This is one of the most complicated proceedings from an engineering perspective that the Commission has encountered in many years. And we couldn't have reached this point without Bahman Badipour, Jamie Coleman, Monisha Ghosh, Navid Golshahi, Michael Ha, Ira Keltz, Paul Murray, Nick Oros, Barbara Pavon, Jamison Prime, Ron Repasi, Max Staloff, Hugh VanTuyl, and Aole Wilkinsel from the Office of Engineering and Technology; from the Wireless Telecommunications Bureau, Chris Andes, Ken Baker, Steven Buenzow, Kamran Etemad, John Lambert, Sean Spivey, and Janet Young; from the Office of General Counsel, Deborah Broderson, Mike Carlson, David Horowitz, Tom Johnson, Keith McCrickard, and Bill Richardson; from the Office of Economics and Analytics, Catherine Mataves, and Patrick Sun; from the International Bureau, Jose Albuquerque and Bob Nelson; from the Enforcement Bureau, Matthew Gibson, and Kathy Harvey; from Public Safety and Homeland Security Bureau, Brian Marengo and Michael Wilhelm; and from the Media Bureau, Sean Yun.



**United States and States of California, Florida, Missouri, Texas,  
and Washington v. Comcast Corp., General Electric Co., and  
NBC Universal, Inc.**

U.S. District Court for the District of Columbia, January 18, 2011

Competitive Impact Statement, 1:11-cv-00106.

The United States of America (“United States”), acting under the direction of the Attorney General of the United States, pursuant to § 2(b) of the Antitrust Procedures and Penalties Act (“APPA” or “Tunney Act”), 15 U.S.C. § 16(b)–(h), files this Competitive Impact Statement relating to the proposed Final Judgment (attached hereto as Exhibit A) submitted for entry in this civil antitrust proceeding.

I. Nature and Purpose of the Proceeding

On December 3, 2009, Comcast Corporation (“Comcast”), General Electric Company (“GE”), NBC Universal, Inc. (“NBCU”), and Navy, LLC (“Newco”), announced plans to form a new Joint Venture (“JV”) to which Comcast and GE will contribute broadcast and cable network assets. As a result of the transaction, Comcast—the nation’s largest cable company—will have majority control of a JV holding highly valued video programming needed by Comcast’s video distribution rivals to compete effectively.

The United States filed a civil antitrust Complaint on January 18, 2011, seeking to enjoin the proposed transaction because its likely effect would be to lessen competition substantially in the market for timely distribution of professional, full-length video programming to residential customers (“video programming distribution”) in major portions of the United States in violation of § 7 of the Clayton Act, 15 U.S.C. § 18. The transaction would allow Comcast to disadvantage its traditional competitors (direct broadcast satellite (“DBS”) and telephone companies (“telcos”) that provide video services), as well as competing emerging online video distributors (“OVDs”). This loss of current and future competition likely would result in lower-quality services, fewer choices, and higher prices for consumers, as well as reduced investment and less innovation in this dynamic industry.

On January 18, 2011, the Federal Communications Commission (“FCC”) adopted a Memorandum Opinion and Order relating to the foregoing transaction. The FCC’s Order approved the transaction subject to certain conditions.

Under the proposed Final Judgment filed by the United States Department of Justice simultaneously with this Competitive Impact Statement and explained more fully below, Defendants will be required, among other things, to license the JV’s programming to Comcast’s emerging OVD competitors in certain circumstances. When Defendants and OVDs cannot reach agreement on the terms and conditions of the license, the aggrieved OVD may apply to the Department for permission to submit its dispute to commercial arbitration under the proposed Final Judgment. The FCC Order contains a similar provision. For so long as commercial arbitration is available for the resolution of such disputes in a timely manner under the FCC’s rules and orders, the Department will ordinarily defer to the FCC’s commercial arbitration process to resolve such disputes. However, the Department reserves the right, in its sole discretion, to permit arbitration under the proposed Final Judgment to advance the Final Judgment’s competitive objectives. In addition, the Department may seek relief from the Court to address violations of any provisions of the proposed Final Judgment. The proposed

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Final Judgment also contains provisions to prevent Defendants from interfering with an OVD's ability to obtain content or deliver its services over the Internet. \*\*\*

## II. Description of Events Giving Rise to the Alleged Violation

### A. Defendants, the Proposed Transaction, and the Department's Investigation

#### 1. Comcast

Comcast is a Pennsylvania corporation headquartered in Philadelphia, Pennsylvania. It is the largest cable company in the nation, with approximately 23 million video subscribers. Comcast is also the largest Internet service provider ("ISP"), with over 16 million subscribers. Comcast also wholly owns national cable programming networks, including E! Entertainment, G4, Golf, Style, and Versus, and has partial ownership interests in Current Media, MLB Network, NHL Network, PBS KIDS Sprout, Retirement Living Television, and TV One. In addition, Comcast has controlling and partial interests in regional sports networks ("RSNs"). Comcast also owns digital properties such as DailyCandy.com, Fandango.com, and Fancast, its online video website. In 2009, Comcast reported total revenues of \$36 billion. Over 94 percent of Comcast's revenues, or \$34 billion, were derived from its cable business, including \$19 billion from video services, \$8 billion from high-speed Internet services, and \$1.4 billion from local advertising on Comcast's cable systems. In contrast, Comcast's cable programming networks earned only about \$1.5 billion in revenues from advertising and fees collected from video programming distributors.

#### 2. GE and NBCU

GE is a New York corporation with its principal place of business in Fairfield, Connecticut. GE is a global infrastructure, finance, and media company. GE owns 88 percent of NBCU, a Delaware corporation, headquartered in New York, New York. NBCU is principally involved in the production, packaging, and marketing of news, sports, and entertainment programming.

NBCU wholly owns the NBC and Telemundo broadcast networks, as well as ten local NBC owned and operated television stations ("O&Os"), 16 Telemundo O&Os, and one independent Spanish language television station. In addition, NBCU wholly owns national cable programming networks—Bravo, Chiller, CNBC, CNBC World, MSNBC, mun2, Oxygen, Sleuth, Syfy, and USA Network—and partially owns A&E Television Networks (including the Biography, History, and Lifetime cable networks), The Weather Channel, and ShopNBC.

NBCU also owns Universal Pictures, Focus Films, and Universal Studios, which produce films for theatrical and digital video disk ("DVD") release, as well as content for NBCU's and other companies' broadcast and cable programming networks. NBCU produces approximately three-quarters of the original primetime programming shown on the NBC broadcast network and the USA cable network, NBCU's two highest-rated networks. In addition to its programming assets, NBCU owns several theme parks and digital assets, such as iVillage.com. In 2009, NBCU had total revenues of \$15.4 billion.

NBCU also is a founding partner and 32 percent owner of Hulu, LLC, currently one of the most successful OVDs. Hulu is a joint venture between NBCU, News Corp., The Walt Disney Company, and a private equity investor. Each of the media partners has representation on the Hulu Board, possesses management rights, and licenses content for Hulu to deliver over the Internet.

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### 3. The Proposed Transaction

On December 3, 2009, Comcast, GE, NBCU, and Newco, entered into a Master Agreement (“Agreement”), whereby Comcast agreed to pay \$6.5 billion in cash to GE, and Comcast and GE each agreed to contribute certain assets to the JV. Specifically, GE agreed to contribute all of the assets of NBCU, including its interest in Hulu, and the 12 percent interest in NBCU that GE does not own but has agreed to purchase from Vivendi SA. Comcast agreed to contribute all its cable programming assets, including its national programming networks, its RSNs, and some digital properties, but not its cable systems or its Internet video service, Fancast. As a result of the content contributions and cash payment by Comcast, Comcast will own 51 percent of the JV, and GE will retain a 49 percent interest. The JV will be managed by a separate Board of Directors consisting initially of three Comcast-designated directors and two GE-designated directors. Board decisions will be made by majority vote.

The Agreement precludes Comcast from transferring its interest in the JV for a four-year period, and prohibits GE from transferring its interest for three and one-half years. Thereafter, either party may sell its respective interest in the JV, subject to Comcast’s right to purchase at fair market value any interest that GE proposes to sell. Additionally, three and one-half years after closing, GE will have the right to require the JV to redeem 50 percent of GE’s interest and, after seven years, GE will have the right to require the JV to redeem all of its remaining interest. If GE elects to exercise its first right of redemption, Comcast will have the contemporaneous right to purchase the remainder of GE’s ownership interest once a purchase price is determined. If GE does not exercise its first redemption right, Comcast will have the right to buy 50 percent of GE’s initial ownership interest five years after closing and all of GE’s remaining ownership interest eight years after closing. It is expected that Comcast ultimately will own 100 percent of the JV. \*\*\*

#### B. The Video Programming Industry

NBCU and Comcast are participants in the video programming industry, in which content is produced and distributed to viewers through their television sets or, increasingly, through Internet-connected devices. Historically, the video programming industry has had three different levels: content production, content aggregation or networks, and distribution.

##### 1. Content Production

Television production studios produce television shows and coordinate how, when, and where their content is licensed in order to maximize revenues. They usually license to broadcast and cable networks the right to show a program first (*i.e.*, the first-run rights). Content producers also license their content for subsequent “windows” such as syndication (*e.g.*, licensing series to broadcast and cable networks after the first run of the programming), as well as for DVD distribution, video on demand (“VOD”), and pay per view (“PPV”) services. For example, the television show *House* is produced by NBCU, licensed for its first run on the FOX broadcast network and then rerun on the USA Network, a cable network owned by NBCU. These content licenses often include ancillary rights such as the right to offer some programming on demand.

Historically, first-run licenses were reserved for one of the four major broadcast networks (ABC, CBS, NBC, and FOX), followed by broadcast syndication and, ultimately, cable syndication. Over the past several years, however, content owners have

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begun to license their content for first run on cable networks and distribution over the Internet on either a catch-up (*e.g.*, next day) or syndicated (*e.g.*, next season) basis.

In addition to producing content for television and cable networks, NBCU produces and distributes first-run movies through Universal Pictures, Universal Studios, and Focus Films. Typically, producers distribute movies to theaters before releasing them on DVD, then license them to VOD/PPV providers, then to premium cable channels (*e.g.*, Home Box Office (“HBO”)), then to regular cable channels, and finally to broadcast networks. As with television distribution, studios have experimented with different windows for film distribution over the past several years.

## 2. Programming Networks

Networks aggregate content to provide a 24-hour service that is attractive to consumers. The most popular networks, by far, are the four broadcast networks.<sup>3</sup> However, cable networks have grown in popularity and number, and at the end of 2009 there were an estimated 600 national, plus another 100 regional, cable programming networks.

### a. Broadcast Networks

Owners of broadcast network programming or broadcasters like NBCU license their broadcast networks either to third-party television stations affiliated with that network (“network affiliates”), or to their owned and operated television stations (“O&Os”). The network affiliates and O&Os distribute the broadcast network feeds over the air (“OTA”) to the public and also retransmit them to video programming distributors, such as cable companies and DBS providers, which in turn distribute the feeds to their subscribers.

Under the Cable Television Consumer Protection and Competition Act of 1992 (“1992 Cable Act”), Pub. L. No. 102–385, 106 Stat. 1460 (1992), broadcast television stations, whether network affiliates or O&Os, may elect to obtain “retransmission consent” from a programming distributor, in which case a distributor negotiates with a station for the right to carry the station’s programming for agreed-upon terms. Alternatively, stations may elect “must carry” status and demand carriage but without compensation. Stations affiliated with the four major broadcast networks and the networks’ O&Os have elected retransmission consent. Historically, these stations negotiated for non-monetary compensation (*e.g.*, carriage of new cable channels owned by the broadcaster) in exchange for retransmission consent. Today, most broadcast stations seek retransmission consent fees based on the number of subscribers to the cable, DBS, or telco service distributing their content. Less popular broadcast networks generally elect must carry status, although recently they also have begun to negotiate retransmission payments. Despite these retransmission payments, broadcast stations earn the majority of their revenues from local advertising sales. The broadcast networks earn most of their revenues from national advertising sales.

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<sup>3</sup> The four largest broadcast networks attract 8 to 12 million viewers each, whereas the most popular cable networks typically attract approximately 2 million viewers each. SNL Kagan, *Economics of Basic Cable Networks* 43 (2009); The Nielsen Company, *Snapshot of Television Use in the U.S. 2* (Sept. 2010), <http://blog.nielsen.com/nielsenwire/wp-content/uploads/2010/09/Nielsen-State-of-TV-09232010.pdf>.



### b. Cable Networks

Popular cable networks include ESPN, USA, MTV, CNN, and Bravo. Cable networks typically derive roughly one half of their revenues from licensing fees paid by video programming distributors and the other half from advertising fees. Generally, a distributor pays an owner of cable networks a monthly per-subscriber fee that may vary based upon the number of subscribers served by the distributor, the programming packages in which the program is included, the percentage of the distributor's subscribers receiving the programming, and other factors. Typically, the popularity or ratings of a network's programming affects the ability of a content owner to negotiate higher license fees. In addition to the right to carry the network, a distributor of the cable network often receives two to three minutes of advertising time per hour on the network for sale to local businesses (*e.g.*, car dealers). A distributor also may receive marketing payments or discounts to encourage wider distribution of the programming. In the case of a completely new cable network, a programmer may pay a distributor to carry the network or offer other discounts.

### 3. Video Programming Distribution

Video programming distributors acquire the rights to transmit professional (as opposed to user-generated videos such as those typically seen on YouTube), full-length (as opposed to clips) broadcast and cable programming networks or individual programs or movies, aggregate the content, and distribute it to their subscribers or users. This content includes live programming, sports, and general entertainment programming from a variety of broadcast and cable networks and from movie studios, and can be viewed either on demand or as scheduled in a broadcast or cable network's linear stream. Video programming distributors offer various packages of content (*e.g.*, basic, expanded basic, digital) with different quality levels (*e.g.*, standard definition, HD, 3D), and employ different business models (*e.g.*, ad-supported, subscription).

#### a. Multichannel Video Programming Distributors

Traditional video programming distributors include incumbent cable companies, DBS providers, cable overbuilders, also known as broadband service providers ("BSPs," such as RCN), and telcos. These distributors are referred to as multichannel video programming distributors ("MVPDs"), and typically offer hundreds of channels of professional video programming to residential customers for a fee.

#### b. Online Video Programming Distributors

OVDs are relatively recent entrants into the video programming distribution market. They deliver a variety of on-demand professional, full-length video programming over the Internet, whether streamed to Internet-connected televisions or other devices, or downloaded for later viewing. Hulu, Netflix, Amazon, and Apple are examples of OVDs, although the content delivered and business model used varies greatly among them.

Unlike MVPDs, OVDs do not own distribution facilities and are dependent upon ISPs for the delivery of their content to viewers. Therefore, the future growth of OVDs depends, in part, on how quickly ISPs expand and upgrade their broadband facilities and the preservation of their incentives to innovate and invest. The higher the bandwidth available from the ISP, the greater the speed and the better the quality of the picture delivered to an OVD's users.

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ISPs' management and pricing of broadband services may also affect OVDs. In particular, OVDs would be harmed competitively if ISPs that are also MVPDs (*e.g.*, cable companies, telcos) were to impair or delay the delivery of video because OVDs pose a threat to those MVPDs' traditional video programming distribution businesses. Because Comcast is the country's largest ISP, an inherent conflict exists between Comcast's provision of broadband services to its customers, who may use this service to view video programming provided by OVDs, and its desire to continue to sell them MVPD services.

Growth of OVDs also will depend, in part, on their ability to acquire programming from content producers. Some cable companies, such as Comcast and Cablevision Corp., have purchased or launched their own cable networks. This vertical integration of content and distribution was one reason for the passage of § 19 of the 1992 Cable Act, 47 U.S.C. § 548. Pursuant to the Act, Congress directed the FCC to promulgate rules that place restrictions on how cable programmers affiliated with a cable company deal with unaffiliated distributors. These "program access rules" were designed to prevent vertically integrated cable companies from refusing to provide popular programming to their competitors. The rules prohibit both the cable company and a cable network owned by it from engaging in unfair acts and practices, including: (1) entering into exclusive agreements to distribute the cable network; (2) selling the cable network to the cable company's competitors on discriminatory terms and conditions; and (3) unduly influencing the cable network in deciding to whom, and on what terms and conditions, to sell its programming. The FCC program access rules do not apply to online distribution or to retransmission of broadcast station content.

### C. The Market for Video Programming Distribution in the United States

The relevant product market affected by this transaction is the market for timely distribution of professional, full-length video programming to residential customers ("video programming distribution"). Professionally produced content is video programming that is created or produced by media and entertainment companies using professional equipment, talent, and production crews, and for which those companies hold or maintain distribution and syndication rights. Video programming distribution is characterized by the aggregation of professionally produced content consisting of entire episodes of shows and movies, rather than short clips. The market for video programming distribution includes both MVPDs and OVDs.

#### 1. Traditional Video Programming Distribution

Cable companies first began operating in the 1940s and initially were granted exclusive franchises to serve local communities. Although they now face competition, the incumbent cable companies continue to serve a dominant share of subscribers in most areas. In the mid-1990s, DirecTV and DISH Network began to offer competing services using small satellite dishes installed on consumers' homes. Around the same time, cable overbuilders began building their own wireline networks in order to compete with the incumbent cable operator and offer video, high-speed Internet, and telephony services—the "triple-play." More recently, Verizon and AT&T entered the market with their own video distribution services, also offering the triple-play. Competition from these video programming distributors encouraged incumbent cable operators across the country to upgrade their systems and offer many more video programming channels, as well as the triple-play. Further innovations have included digital video recorders ("DVRs") that allow consumers to record programming and view it later,

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and VOD services that enable viewers to watch broadcast or cable network programming or movies on demand at the consumer's convenience for a limited time.

A consumer purchasing video programming distribution services selects from those distributors offering such services directly to that consumer's home. The DBS operators—DirecTV and DISH—can reach almost any consumer who lives in the continental United States and has an unobstructed line of sight to the DBS operators' satellites. However, wireline cable distributors, such as Comcast and Verizon, generally must obtain a franchise from local or state authorities to construct and operate a wireline network in a specific area, and can build lines only to the homes in that area. A consumer cannot purchase video programming distribution services from a wireline distributor operating outside its area because that firm does not have the facilities to reach the consumer's home. Consequently, although the set of video programming distributors able to offer service to individual consumers' residences generally is the same within each local community, that set differs from one local community to another and can even vary within a local community. The markets for video programming distribution therefore are local.

The geographic markets relevant to this transaction are the numerous local markets throughout the United States where Comcast is the incumbent cable operator and where Comcast through the JV will be able to withhold NBCU programming from, or raise programming costs to, Comcast's rival distributors. Comcast service areas cover 50 million U.S. television households or about 45 percent of households nationwide, with nearly half of those households (23 million) subscribing to at least one Comcast service. Competitive effects also may be felt in other areas because Comcast's competitors serve territories outside its cable footprint. If Comcast can disadvantage these rivals, for example by raising their costs, competition will be reduced everywhere these competitors provide service reflecting these higher costs. Thus, the potential anticompetitive effects of the transaction could extend to almost all Americans.

The incumbent cable companies often dominate any particular market and typically hold well over 50 percent market shares within their franchise areas. For example, Comcast has market shares of 64 percent in Philadelphia, 62 percent in Chicago, 60 percent in Miami, and 58 percent in San Francisco (based on MVPD subscribers). Combined, the DBS providers account for approximately 31 percent of video programming subscribers nationwide, although their shares vary and may be lower in any particular local market. Although AT&T and Verizon have had great success and achieved penetration (*i.e.*, the percentage of households to which a provider's service is available that actually buys its service) as high as 40 percent in the selected communities they have entered, they currently have limited expansion plans. Overbuilders serve an even smaller portion of the United States.

## 2. Competition from OVDs

OVDs are relatively recent entrants into the video programming distribution market. Their services are available to any consumer with high-speed Internet service sufficient to receive video of an acceptable quality. OVDs have increased substantially the amount of full-length professional content they distribute online. Viewership of video content distributed over the Internet has grown enormously and is expected to continue to grow. The number of adult Internet users who watch full-length television shows online is expected to increase from 41.1 million in 2008 to 72.2 million in 2011. The total number of unique U.S. viewers of video who watch full-length television

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shows online grew 21 percent from 2008 to 2009. OVD revenues also have increased dramatically. Revenue associated with video content delivered over the Internet to televisions is expected to grow from \$2 billion in 2009 to over \$17 billion in 2014.

One reason for the dramatic growth of online distribution is the increased consumer interest in on-demand viewing, especially among younger viewers who have grown up with the Internet, and are accustomed to viewing video at a time and on a device of their choosing. In response to competition by OVDs, MVPDs increasingly are offering more on-demand choices.

a. OVD Business Models and Participants

Recognizing the enormous potential of OVDs, dozens of companies are innovating and experimenting with products and services that either distribute online video programming or facilitate such distribution. New developments, products, and models are announced on almost a daily basis by companies seeking to satisfy consumer demand. A number of companies are committing significant resources to this industry.

OVDs provide content using a variety of different business models. Some offer content on an ad-supported basis pursuant to which consumers pay nothing. One firm using this model is Hulu, which aggregates primarily current-season broadcast content from NBC, FOX, ABC, and others. Hulu has experienced substantial growth since its launch in 2008, reaching 39 million unique viewers by February 2010.

Netflix has pursued a different business model. It initially offered DVDs delivered by mail and then added unlimited streaming of a limited library of content over the Internet for a monthly subscription fee. Netflix has expanded its online library and introduced an Internet-only subscription service. Netflix content primarily consists of relatively recent movies, older movies, and past-season television shows. Netflix recently announced a deal with premium cable network EPIX for access to more movie content that it will distribute over the Internet. Netflix also has grown substantially in the last several years, from 7.5 million subscribers at the end of 2007 to 16.9 million in the third quarter of 2010.

Apple also is experimenting with different business models for video programming distribution. For several years it has offered content on an electronic sell-through (“EST”) basis through its Apple iTunes Store. Customers pay a per-transaction fee to buy television shows and movies and download them onto various electronic devices (*e.g.*, iPod). Apple recently announced a service that allows consumers to rent television content on a per-transaction basis (*e.g.*, \$0.99 per show) and view it for a limited time. Other major companies are offering or planning to offer OVD services.<sup>14</sup>

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<sup>14</sup> For example, Google recently launched GoogleTV, a device that enables viewers simultaneously to search the Internet and their MVPD service for content, and to switch back and forth on their televisions between content delivered over the Internet and content delivered by their MVPD. Press Release, Google, Industry Leaders Announce Open Platform to Bring Web to TV (May 20, 2010), [http://www.google.com/intl/en/press/pressrel/20100520\\_googletv.html](http://www.google.com/intl/en/press/pressrel/20100520_googletv.html). Walmart recently acquired VUDU, an OVD service, and is making content available for EST and rental to VUDU-enabled devices. Press Release, Walmart Announces Acquisition of Digital Entertainment Provider, VUDU (Feb. 22, 2010), <http://www.walmartstores.com/pressroom/news/9661.aspx>. Amazon is reportedly developing an OVD service that allows Amazon service subscribers to stream television and movie content over the Internet. Nick Wingfield & Sam Schechner, No Longer Tiny, Netflix Gets Respect—and Creates Fear, Wall St. J. (Dec. 6, 2010), <http://online.wsj.com/article/SB10001424052748704493004576001781352962132.html>. Sears and Kmart recently announced the

b. The Impact of OVDs

Some of these OVD products and services undoubtedly will be viewed by consumers as closer substitutes for MVPD services than others. The extent to which an OVD service has the potential to become a better substitute for MVPD service will depend on a number of factors, such as the OVD's ability to obtain popular content, its ability to protect the licensed content from piracy, its financial strength, and its technical capabilities to deliver high-quality content. Moreover, as noted previously, OVDs' future competitive significance depends, in part, on robust broadband capacity. Accordingly, the competitive significance of OVDs is fostered by protecting broadband providers' economic incentives to upgrade and improve their broadband infrastructure, and obtain fair returns on that investment.

Today, some consumers regard OVDs as acceptable substitutes for at least a portion of their traditional video programming distribution services. These consumers buy smaller content packages from traditional distributors, decline to take certain premium channels, or purchase fewer VOD offerings, and instead watch that content online, a practice known as "cord-shaving." A small but growing number of MVPD customers are also "cutting the cable cord" completely in favor of OVDs. These customers may rely on an individual OVD or may view video content from a number of OVDs (*e.g.*, Hulu ad-supported service, Netflix subscription service, Apple EST service) as a replacement for their MVPD service.

When measured by the number of customers who are cord-shaving or cord-cutting, OVDs currently have a de minimis share of the video programming distribution market. Their current market share, however, greatly understates their potential competitive significance in this market. Whether viewers buy individual or a combination of OVD services, OVDs are likely to continue to develop into better substitutes for MVPD video services. Evolving consumer demand, improving technology (*e.g.*, higher Internet access speeds, better compression technologies to improve picture quality, improved digital rights management to combat piracy), the increased choice of viewing devices, and advertisers' increasing willingness to place their ads on the Internet likely will make OVDs stronger competitors to MVPDs for an increasing number of viewers.<sup>15</sup>

The development of the video programming distribution market—and in particular the success of OVDs—may influence any future analysis of consolidation in this market. Such analysis would follow standard merger evaluation principles and consider not only the role of OVDs, but also factors such as the extent to which the merging firms' offerings are close substitutes and compete directly. In this case, Defendants' own assessments—as reflected in numerous internal documents and their executives' testimony—of the importance of OVDs and their potential to alter dramatically the

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launch of an online video store, called Alphaline, which sells and rents movies and television shows. Paul Bond, Sears, Kmart launch Alphaline online video store, Reuters (Dec. 30, 2010), <http://www.reuters.com/article/idUSTRE6BT03C20101230>.

<sup>15</sup> Historically, OTA distribution of broadcast network content has not served as a significant competitive constraint on MVPDs because of the limited number of channels offered. In addition, OTA distribution likely will not expand in the future because no new broadcast networks are likely to be licensed for distribution. Thus, OTA is unlikely to become a more significant video programming distributor. By contrast, OVDs are expanding rapidly and have the potential to provide increased and more innovative viewing options in the future.

existing competitive landscape are particularly important to determining the relevant product market.

c. Comcast's and Other MVPDs' Reactions to the Growth of OVDs

Comcast and other MVPDs recognize the threat posed to their video distribution business from the growth of OVDs. Many internal documents reflect Comcast's assessment that OVDs are growing quickly and pose a competitive threat to traditional forms of video programming distribution. In response to this threat, Comcast has taken significant steps to improve the quality of Fancast, its own Internet video service. Among other things, Comcast has attempted to obtain additional—and at times exclusive—content from programmers, and has made Fancast's user interface easier to navigate. Comcast also has increased the quality and quantity of the VOD content it offers as an adjunct to its traditional cable service.

In addition, Comcast has created and implemented an “authentication” system that enables its existing cable subscribers to view some video content over the Internet if the subscriber already pays for and receives the same content from Comcast through its traditional cable service. Internal documents expressly acknowledge that “authentication” is Comcast's and other MVPDs' attempt to counter the perceived threat posed by OVDs.

Comcast's and other MVPDs' reactions to the emergence of OVDs demonstrate that they view OVDs as a future competitive threat and are adjusting their investment decisions today in response to that threat. Because OVDs today affect MVPDs' decisions, they are appropriately treated as participants in the market. Market definition considers future substitution patterns, and the investment decisions of MVPDs are strong evidence of market participants' view of the increased likelihood of consumer substitution between MVPD and OVD services. This effect on investment is significant and could be diminished or even lost altogether if Comcast, through the JV, acquires the ability to delay or deter the development of OVDs.

D. The Anticompetitive Effects of the Proposed Transaction \*\*\*

1. The Importance of Access to NBCU Content

\*\*\* NBCU content is extremely valuable to video programming distributors. NBC is one of the original three broadcast networks and has decades of history and brand name recognition. It carries general interest content that appeals to a wide variety of viewers. Surveys routinely rank the NBC network as one of the top four of all broadcast and cable networks. Similarly, NBCU's USA Network is highly valued and has been rated the top cable network for four of the past five years. Many of NBCU's other networks—Bravo, CNBC, MSNBC, SyFy—also are highly rated and valued by their audiences.

The proposed transaction would give Comcast, through the JV, control of an important portfolio of current and library content. The ratings of each NBCU network are based on the popularity of the particular slate of shows currently on that network and can increase or decrease significantly from one television season to the next based on the gain or loss of hit shows. NBCU also has the ability to switch programming from one network to another, or otherwise make popular content from one network available to another. Through the JV, Comcast would gain the ability to impair emerging OVD competition by withholding or raising the prices of individual NBCU shows, or of linear feeds of one or more NBCU cable or broadcast networks. It is reasonable

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to examine the competitive impact of withholding NBCU content in the aggregate, rather than analyzing the value of any individual show or network to a competitor, because an aggregate withholding strategy would have the greatest impact on Comcast's downstream rivals.

## 2. The Proposed Transaction Increases the JV's Incentive and Ability to Harm Competitors

### a. *Ability and Incentive to Harm Rival MVPDs*

If the proposed transaction is approved, Comcast through the JV will gain control of NBCU's content, including a substantial amount of valuable broadcast and cable programming. Competing MVPDs will be forced to obtain licenses for NBCU content from their rival, Comcast. Unlike a stand-alone programmer, Comcast's pricing and distribution decisions will take into account the impact of those decisions on the competitiveness of rival MVPDs. As a result, Comcast will have a strong incentive to disadvantage its competitors by denying them access to valuable programming or raising their licensing fees above what a stand-alone NBCU would have found it profitable to charge.

A stand-alone programmer typically attempts to maximize the combined license fee and advertising revenues from its programming by making its content available in multiple ways. The JV would continue to value widespread distribution of NBCU content, but it also would likely consider how access to that content makes Comcast's MVPD rivals better competitors. This could lead the JV to withhold content altogether or, more likely, to insist on higher fees for the NBCU content from Comcast's MVPD competitors. Whether Comcast's rival MVPDs refuse to purchase the programming or agree to pay the higher fees, Comcast would benefit from weakening its MVPD rivals. Likewise, high licensing fees charged to other MVPDs and OVDs will also induce customers to switch to (or stay with) Comcast. These higher licensing fees will be reflected either in higher subscriber fees or, in the case of MVPDs building alternative cable distribution infrastructures, a smaller level of investment and, consequently, a smaller coverage area for the MVPD competing with Comcast. In either case, higher licensing fees will reduce pricing pressure on Comcast's MVPD business and increase its ability to raise prices to its subscribers.

By disadvantaging competitors in this manner, Comcast through the JV will cause some of its rivals' customers to seek an alternative MVPD provider. Many of these dissatisfied customers likely will become Comcast subscribers, making it profitable for Comcast and the JV to increase licensing fees above the stand-alone NBCU levels. Those increased fees likely will lead to higher prices for subscribers of other MVPDs and perhaps further migration by those subscribers to Comcast.

Licensing disputes in which a major broadcast network has pulled a network signal from an MVPD have resulted in the MVPD's loss of significant numbers of subscribers to its competitors. Through the formation of the JV, Comcast gains the rights to negotiate on behalf of the seven O&Os that operate in areas where it is the dominant cable company. It also becomes the owner of the NBC network, which may give it leverage to seek the rights to negotiate on behalf of NBCU's NBC network affiliate television stations, or at least the ability to influence affiliate negotiations, for retransmission consent rights in other areas of the United States. Comcast, through the JV, can withhold or raise the price of the NBC network to its rivals, thereby causing customers to shift away from the rival. Other NBCU programming also is important to

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consumers, and similar switching behavior could result if the JV were to withhold it from Comcast's rival MVPDs.

Comcast has engaged in such strategies in the past. For example, Comcast has withheld its RSN in Philadelphia in order to discriminate against, and thereby disadvantage, DBS providers against which Comcast competes in that city. The DBS providers' market shares are lower and Comcast's subscription fees are higher in Philadelphia than in comparable markets. This appears to have been a profitable strategy for Comcast because the overall benefit to its cable business of retaining subscribers seems to have outweighed the substantial losses associated with failing to earn licensing fees for the withheld RSN from DBS companies.

Post-transaction, Comcast's rival MVPDs would realize that, unlike the stand-alone NBCU, the JV will set higher licensing fees for NBCU that take into consideration Comcast's business profits. Some MVPDs might find it unprofitable to carry the programming at the prices the JV could command. Other MVPDs might agree to the JV's increased prices for the NBCU content given the likelihood that they would lose a large number of their subscribers if they did not carry the NBCU content.

Lowering the profitability of Comcast's MVPD rivals also would weaken the incentives of some existing and future entrants to build out their systems, especially in areas Comcast currently serves, weakening the competitive constraints faced by Comcast. This weakened state of competition would allow Comcast, in turn, to decrease its investments and innovation to improve its own offerings. Higher subscription fees for Comcast services or decreased investment in improving their quality are less likely to induce customer switching to Comcast's MVPD rivals where those rivals are unable to match its programming or prices. As a result, Comcast could reinforce and even increase its dominant market share of video programming distribution in all areas of the country in which it operates.

b. Incentive and Ability to Harm OVDs

Comcast, through the JV, also could discriminate against competing OVDs in similar ways, thereby diminishing the competitive threat posed by individual OVDs and impeding the development of OVDs, generally. The JV could charge OVDs higher content fees than the stand-alone NBCU would have charged, or impose different terms for NBCU content than Comcast negotiates for itself. The JV also could withhold NBCU content completely, thereby diminishing OVDs' ability to compete for video programming distribution customers, again to Comcast's benefit. Either situation could delay significantly the development of OVDs as a competitive alternative to traditional video programming distribution services.

Over the last several years, NBCU has been one of the content providers most willing to experiment with different methods of online distribution. It was a driving force behind the creation and success of Hulu, and is now a partner in, and major content contributor to, the recently launched Hulu Plus, a subscription version of Hulu. Prior to the JV announcement, NBCU entered into several contracts with OVDs to distribute its content online through Apple iTunes and Amazon, and on a subscription basis through Netflix. Allowing the JV to proceed removes NBCU content from the control of a company that supported the development of OVDs and places it in the control of a company that views OVDs as a serious competitive threat.

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Finally, Comcast, through the JV, would gain control of NBCU's governance rights and 32 percent ownership interest in Hulu, a current and future competitor to Comcast's MVPD services. Hulu has achieved significant success since its launch in early 2008.

Each of the media partners in Hulu, including NBCU, contributes content to Hulu and holds three seats on Hulu's Board of Directors. Significantly, any important or strategic decisions by Hulu require the unanimous approval of all members of the Board. Comcast's acquisition of NBCU's interest in Hulu would give it the ability to hamper Hulu's strategic and competitive development by refusing to agree to major actions by Hulu, or by blocking Hulu's access to NBCU content.

### 3. How the Formation of the JV Changes Comcast's Incentives and Abilities

Post-transaction, the JV would gain increased bargaining leverage sufficient to negotiate higher prices or withhold NBCU content from Comcast's MVPD competitors. Comcast's rival distributors would have to pay the increased prices or not carry the programming. In either case, the MVPDs likely would be less effective competitors to Comcast, and Comcast would be able to delay or otherwise substantially impede the development of OVDs as alternatives to MVPDs.

All of these activities could have a substantial anticompetitive effect on consumers and the market. Because Comcast would face less competition from other video programming distributors, it would be less constrained in its pricing decisions and have a reduced incentive to innovate. As a result, consumers likely would be forced to pay higher prices to obtain their video content or receive fewer benefits of innovation. They also would have fewer choices in the types of content and providers to which they would have access, and there would be lower levels of investment, less experimentation with new models of delivering content, and less diversity in the types and range of product offerings.

### 4. Entry Is Unlikely to Reverse the Anticompetitive Effects of the JV

Over the last decade, Comcast and other traditional video distributors benefited from an industry with limited competition and increasing prices, in part because successful entry into the traditional video programming distribution business is difficult and requires an enormous investment to create a distribution infrastructure such as building out wireline facilities or obtaining spectrum and launching satellites. Accordingly, additional entry into wireline or DBS distribution is not likely in the foreseeable future. Telcos have been willing to incur some of the enormous costs to modify their existing telephone infrastructure to distribute video, but only in certain areas, and they have recently indicated that further expansion will be limited for the foreseeable future.

OVDs, therefore, represent the most likely prospect for successful competitive entry into the existing video programming distribution market. However, they face the difficulty of obtaining access to a sufficient amount of content to become viable distribution businesses. In addition, OVDs rely upon the infrastructure of others, including Comcast, to deliver service to their customers. After the JV is formed, Comcast will control some of the most significant content needed by OVDs to successfully position themselves as a replacement for traditional video distribution providers.

### 5. Any Efficiencies Arising from the Deal Are Negligible or Not Merger-Specific

The Department considers expected efficiencies in determining whether to challenge a vertical merger. The potential anticompetitive harms from a proposed transaction

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are balanced against the asserted efficiencies of the transaction. The evidence does not show substantial efficiencies from the transaction.

In particular, the JV is unlikely to achieve substantial savings from the elimination of double marginalization. Double marginalization occurs when two independent companies at different points in a product's supply chain each extract a profit margin above marginal cost. Because each firm in the supply chain treats the other firm's price (in lieu of its marginal cost) as a cost of producing the final good, each firm finds it profitable to produce a lower output than the firms would have produced had they accurately accounted for the social cost of producing the output. This ultimately results in a lower output (and a higher price to consumers) than would have occurred if the product had been produced by a combined firm. Despite a higher price, the lower output from double marginalization ultimately results in lower total profits for the entire supply chain.

Vertical mergers often are procompetitive because they enable the merged firm to properly account for costs when determining output and setting a final product price. The combined firm no longer treats the profit of the other firm as part of the cost of production. Because the combined firm faces lower marginal costs, it may find it profitable to expand output and reduce the final product price. Lower marginal costs may result in better service, greater product quality or innovation, or other improvements.

In certain industries, however, including the one at issue here, vertical mergers are far less likely to reduce or eliminate double marginalization. Documents, data, and testimony obtained from Defendants and third parties demonstrate that much, if not all, of any potential double marginalization is reduced, if not completely eliminated, through the course of contract negotiations between programmers and distributors over quantity and penetration discounts, tiering requirements, and other explicit and verifiable conditions.

Other efficiencies claimed by Comcast are not specific to this transaction or not verifiable, or both. It is unlikely that the efficiencies associated with this transaction would be sufficient to undo the competitive harm that otherwise would result from the JV.

### III. Explanation of the Proposed Final Judgment

The proposed Final Judgment ensures that Comcast, through the JV, will not impede the development of emerging online video distribution competition by denying access to the JV's content to such competitors. The proposed Final Judgment also contains provisions that protect Comcast's traditional video distribution competitors. The proposed Final Judgment thereby protects consumers by eliminating the likely anticompetitive effects of the proposed transaction.

#### A. The Proposed Final Judgment Protects Emerging Online Video Competition

##### 1. The Proposed Final Judgment Ensures that OVDs have Access to the JV's Video Programming

The proposed Final Judgment requires the JV to license its broadcast, cable, and film content to OVDs on terms comparable to those in similar licensing arrangements with MVPDs or OVDs. It provides two options through which an OVD will be able to obtain the JV's content.

Under the first option, set forth in Section IV.A of the proposed Final Judgment, the JV must license linear feeds of video programming to any requesting OVD on

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terms that are economically equivalent to the terms on which the JV licenses that programming to MVPDs. Subject to some exceptions, the JV must make available to an OVD any channel or bundle of channels, and all quality levels and VOD rights, it provides to any MVPD with more than one million subscribers.

The terms of the JV's license with the OVD need not match precisely any existing license between the JV and the MVPD, but it must reasonably approximate, in the aggregate, an existing licensing agreement. That approximation must account for factors, such as advertising revenues and any technical and economic limitations of the OVD seeking a license.

The first option ensures that the JV will not be able to use its control of content to impede competitive pressure exerted on traditional forms of video programming distribution from OVDs that choose to offer linear channels and associated VOD content. The proposed Final Judgment uses Defendants' own contracts with MVPDs, including MVPDs that do not compete with Comcast, as proxies for the content and terms the JV would be willing to provide to distributors if it did not have the incentive or ability to disadvantage them in order to maintain customers in or drive customers to Comcast's service.

Under the second option, set forth in Section IV.B, the proposed Final Judgment requires the JV to license to an OVD, broadcast, cable, or film content comparable in scope and quality to the content the OVD receives from one of the JV's programming peers. For example, if an OVD receives each episode of five primetime television series from CBS for display in a subscription VOD service within 48 hours of the original airing, the JV must provide the OVD a comparable set of NBC broadcast television programs, as measured by volume and economic value, for display during the same subscription VOD window. The requirement applies to all JV content, even non-NBCU content, in order to ensure that the JV cannot undermine the purposes of the proposed Final Judgment by shifting content from one network to another.

While the first option ensures that Comcast, through the JV, will not disadvantage OVD competitors in relation to MVPDs, the second option ensures that the programming licensed by the JV to OVDs will reflect the licensing trends of its peers as the industry evolves. Because the OVD industry is still developing, the contracts of the JV's peers also provide an appropriate benchmark for determining the terms and conditions under which content should be licensed to OVDs. The programming peers include the owners of the three major non-NBC broadcast networks (CBS, FOX, and ABC), the largest cable network groups (including News Corporation, Time Warner, Inc., Viacom, and The Walt Disney Company), and the six largest production studios (including News Corporation, Viacom, Sony Corporation of America, Time Warner Inc., and The Walt Disney Company).

If an OVD and the JV are unable to reach an agreement for carriage of the JV's programming under either of these options, an OVD may apply to the Department for permission to submit its dispute to commercial arbitration in accordance with Section VII of the proposed Final Judgment. The FCC Order requires the JV to license content on reasonable terms to OVDs and includes an arbitration mechanism for resolution of disputes over access to programming. The FCC is the expert communications industry agency, and the Department worked very closely with the FCC in designing effective relief in this case. For so long as commercial arbitration is available for resolution of disputes in a timely manner under the FCC's rules and orders, the

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Department will ordinarily defer to the FCC's commercial arbitration process to resolve such disputes. OVDs are nascent competitors, however, and consistent with the Department's competition law enforcement mandate, the Department reserves the right, in its sole discretion, to permit arbitration pursuant to Section VII to advance the competitive objectives of the proposed Final Judgment. Although the Department may seek enforcement of the Final Judgment through traditional judicial process, the arbitration process will help ensure that OVDs can obtain content from the JV at a competitive price, without involving the Department or the Court in expensive and time-consuming litigation. To support the proposed Final Judgment's requirement that the JV license its programming to OVDs and assist the Department's oversight of this nascent competition, Comcast and NBCU are required, pursuant to Sections IV.M and IV.N, to maintain copies of agreements the JV has with any OVD as well as the identities of any OVD that has requested video programming from the JV.

### 2. The Proposed Final Judgment Prevents Comcast, through the JV, from Adversely Affecting Hulu

Section IV.D of the proposed Final Judgment requires Defendants to relinquish their voting and other governance rights in Hulu, and Section IV.E prohibits them from receiving confidential or competitively sensitive information concerning Hulu. As noted above, Hulu is one of the most successful OVDs to date. Comcast has an incentive to prevent Hulu from becoming an even more attractive avenue for viewing video programming because Hulu would then exert increased competitive pressure on Comcast's cable business. If the proposed transaction were to be consummated without conditions, Defendants would hold seats on Hulu's Board of Directors and could exercise their voting and other governance rights to compromise strategic and competitive initiatives Hulu may wish to pursue. Requiring Defendants to relinquish their voting and governance rights in Hulu, and barring access to competitively sensitive information, will prevent Comcast, through the JV, from interfering with Hulu's competitive and strategic plans.

At the same time, NBCU should not be permitted to abandon its commitments to provide Hulu video programming under agreements currently in place and deny Hulu customers the value of the JV's content. Therefore, Section IV.G of the proposed Final Judgment requires the JV to continue to supply Hulu with content commensurate with the supply of content provided to Hulu by its other media owners.

### 3. The Proposed Final Judgment Prohibits Defendants from Discriminating Against, Retaliating Against, or Punishing Video Programmers and OVDs

The proposed Final Judgment protects the development of OVDs by prohibiting Defendants from engaging in certain conduct that would deter video programmers and OVDs from contracting with each other. Section V.A of the proposed Final Judgment prohibits Defendants from discriminating against, retaliating against, or punishing any content provider for providing programming to any OVD. Section V.A also prohibits Defendants from discriminating against, retaliating against, or punishing any OVD for obtaining video programming, for invoking any provisions of the proposed Final Judgment or any FCC rule or order, or for furnishing information to the Department concerning Defendants' compliance with the proposed Final Judgment.

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#### 4. The Proposed Final Judgment Prohibits Defendants from Limiting Distribution to OVDs through Restrictive Licensing Practices

The proposed Final Judgment further protects the development of OVDs by preventing Comcast from using its influence either as the nation's largest MVPD or as the licensor, through the JV, of important video programming to enter into agreements containing restrictive contracting terms. Video programming agreements often grant licensees preferred or exclusive access to the programming content for a particular time period. Such exclusivity provisions can be competitively neutral, but also can have either pro- or anticompetitive purposes or effects. Sections V.B and V.C of the proposed Final Judgment set forth broad prohibitions on restrictive contracting practices, including exclusives, but then delineate a narrowly tailored set of exceptions to those bans. These provisions ensure that Comcast, through the JV, cannot use restrictive contract terms to harm the development of OVDs and, at the same time, preserve the JV's incentives to produce and exploit quality programming.

The video programming distribution industry frequently uses exclusive contract terms that can be procompetitive. For instance, as discussed above, content producers often sequence the release of their content to various distribution platforms, a practice known as "windowing." These windows of exclusivity enable a content producer to maximize the revenues it earns on its content by separating customers based on their willingness to pay and effectively increasing the price charged to the customers that place a higher value on receiving content earlier. Exclusivity also encourages the various distributors, such as cable companies, to promote the content during a distribution window by assuring the distributor that the content will not be available through other distribution channels at a lower price. This ability to price discriminate across types of customers and increase promotion of the content increases the profitability of producing quality programming and encourages the production of more high-quality programming than otherwise would be the case. Exclusivity also may help a new competitor gain entry to a market by encouraging users to try a service they would not otherwise consider. For example, an OVD may desire a limited exclusivity window in order to market its exclusive access to certain programming provided by its service. This unique content makes the service more attractive to consumers and gives them a reason to replace their existing service or try something new.

However, exclusivity restrictions also can serve anticompetitive ends. As a cable company, Comcast has the incentive to seek exclusivity provisions that would prevent content producers from licensing their content to alternative distributors, such as OVDs, for a longer period than the content producer ordinarily would find economically reasonable, in order to hinder OVD development. If Comcast could use exclusivity provisions to prevent the JV's peers from licensing content to OVDs that otherwise would obtain the rights to offer the programming, other provisions of the proposed Final Judgment designed to preserve and foster OVD competition could be effectively nullified.

The proposed Final Judgment strikes a balance by allowing reasonable and customary exclusivity provisions that enhance competition while prohibiting those provisions that, without any offsetting procompetitive benefits, hinder the development of effective competition from OVDs. Section V.B of the proposed Final Judgment prohibits the JV from entering into any agreement containing terms that forbid, limit, or create

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economic incentives for the licensee to limit distribution of the JV's video programming through OVDs, unless such terms are common and reasonable in the industry. Evidence of what is common and reasonable industry practice includes, among other things, Defendants' contracting practices prior to the date that the JV was announced, as well as practices of the JV's video programming peers. This provision allows the JV to employ those pricing and contractual strategies used by its peers to maximize the value of the content it produces, while limiting Comcast's incentives, through the JV, to craft unusually restrictive contractual terms in the JV's contracts with third parties, the purpose of which is to limit the access of OVDs to content produced by the JV. Section V.C of the proposed Final Judgment prohibits Comcast from entering into or enforcing agreements for carriage of video programming on its cable systems that forbid, limit, or create incentives that limit the provision of video programming to OVDs. Section V.C establishes three narrow exceptions to this broad prohibition. First, Comcast may obtain a 30-day exclusive from free online display if Comcast pays for the video programming. Second, Comcast may enter into an agreement in which the programmer provides content exclusively to Comcast, and to no other MVPD or OVD, for 14 days or less. Third, Comcast may condition carriage of programming on its cable system on terms which require it to be treated in material parity with other similarly situated MVPDs, except to the extent such terms would be inconsistent with the purpose of the proposed Final Judgment. These provisions are designed to ensure that Comcast, either alone or in conjunction with the JV, cannot use existing or new contracts to dictate the terms of the video programming agreements that the JV's peers are able to offer OVDs, thereby hindering the development of OVDs.

#### 5. The Proposed Final Judgment Prohibits Unreasonable Discrimination in Internet Broadband Access

Section V.G of the proposed Final Judgment requires Comcast to abide by certain restrictions on the operation and management of its Internet facilities. Without these restrictions Comcast would have the ability and the incentive to undermine the effectiveness of the proposed Final Judgment. Comcast is the dominant high-speed ISP in much of its footprint and therefore could disadvantage OVDs in ways that would prevent them from becoming better competitive alternatives to Comcast's video programming distribution services. OVDs are dependent upon ISPs' access networks to deliver video content to their subscribers. Without the protections secured in the proposed Final Judgment, Comcast would have the ability, for instance, to give priority to non-OVD traffic on its network, thus adversely affecting the quality of OVD services that compete with Comcast's own MVPD or OVD services. Comcast also would be able to favor its own services by not subjecting them to the network management practices imposed on other services.

Section V.G.1 of the proposed Final Judgment prohibits Comcast from unreasonably discriminating in the transmission of lawful traffic over its Internet access service, with the proviso that reasonable network management practices do not constitute unreasonable discrimination. This provision requires Comcast to treat all Internet traffic the same and, in particular, to ensure that OVD traffic is treated no worse than any other traffic on Comcast's Internet access service, including traffic from Comcast and NBCU sites. Similarly, Section V.G.2 prohibits Comcast from excluding their own services from any caps, tiers, metering, or other usage-based billing plans, and requires them to ensure that OVD traffic is counted in the same way as Comcast's traffic, and

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that billing plans are not used to disadvantage an OVD in favor of Comcast. Many high-speed Internet providers are evaluating usage-based billing plans. These plans may more efficiently apportion infrastructure costs across users, offer lower-cost service to low-volume subscribers, or divert high-volume usage to non-peak hours. However, these plans also have the potential to increase the cost of high-volume services, such as video distribution, that may compete with an MVPD's video services. Section V.G.2 addresses this concern by ensuring that under these plans Comcast must treat other OVD services just as it treats its own Internet-based video services.

Specialized Services are offered to consumers over the same last-mile facilities as Internet access services, but are separate from the public Internet. The potential benefits of Specialized Services include the facilitation of services that might not otherwise be technically or economically feasible on current networks and the development of new and innovative services, such as services that may compete directly with Comcast's own MVPD offerings. If Comcast were to offer online video services through Specialized Services, however, it could effectively avoid the prohibitions in Sections V.G.1 and V.G.2. Sections V.G.3 and V.G.4 recognize both the potential benefits and the risks of Specialized Services and strike a balance to protect the beneficial development of these services while preventing Comcast from using them anticompetitively to benefit its own content. Section V.G.3 prohibits Comcast from offering Specialized Services that are comprised substantially or entirely of the JV's content. Section V.G.4 requires Comcast to allow any OVD access to a Specialized Service if other OVDs, including Comcast, are being offered access. Together, these two provisions ensure that OVDs will have access to any Specialized Service Comcast may offer that includes comparable services.

Finally, Section V.G.5 ensures that Comcast will maintain its public Internet access service at a level that typically would allow any user on the network to download content from the public Internet at speeds of at least 12 megabits per second in markets where it has deployed DOCSIS 3.0. The requirement to maintain service at this speed may be adjusted by the Court upon a showing that other comparable high-speed Internet access providers offer higher or lower speeds. These speeds are sufficient to ensure that Comcast's Internet access services can support the development of OVDs as well as other services that are potentially competitive with Comcast's own offerings.

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#### B. The Proposed Final Judgment Preserves Traditional Video Competition

A number of FCC orders issued in prior mergers established a commercial arbitration process for resolution of disputes over access to broadcast network programming and regional sports networks. The FCC Order approving this transaction requires the JV to license all of its programming to MVPDs, including its cable networks, and includes an arbitration mechanism that contains several enhancements to its existing commercial arbitration process when licensing disputes between Defendants and other MVPDs arise. The Department believes that these enhancements, combined with the FCC's experience in MVPD arbitration disputes, should protect MVPDs' access to the JV's programming without need of another commercial arbitration mechanism for MVPDs under this proposed Final Judgment.

In addition to the protections contained in the FCC Order, the proposed Final Judgment, in Section V.A, prohibits Defendants from discriminating against, retaliating against, or punishing any MVPD for obtaining video programming, for furnishing any

information to the United States about any noncompliance with the proposed Final Judgment, or for invoking the arbitration provisions of the FCC Order. Section V.D also prevents Defendants from requiring or encouraging their local broadcast network affiliates to deny MVPDs the right to carry the local network signals. To aid the enforcement of this prohibition, pursuant to Sections IV.J and IV.K, Comcast and NBCU are required to maintain not only their network affiliate agreements, but also all documents discussing whether any of their affiliates has withheld or threatened to withhold retransmission consent from any MVPD.

#### C. Term of the Proposed Final Judgment

Section XI of the proposed Final Judgment provides that the Final Judgment will expire seven years from the date of entry unless extended by the Court. The FCC Order also lasts for seven years. The Department believes this time period is long enough to ensure that the JV cannot deny access to Comcast's OVD competitors at a crucial point in their development but otherwise short enough to account for the rapidly evolving nature of the video distribution market.

#### VI. Alternatives to the Proposed Final Judgment

The United States considered, as an alternative to the proposed Final Judgment, seeking preliminary and permanent injunctions against Defendants' transaction and proceeding to a full trial on the merits. The United States is satisfied, however, that the relief in the proposed Final Judgment will preserve competition for the provision of video programming distribution services in the United States. Thus, the proposed Final Judgment would protect competition as effectively as would any remedy available through litigation, but avoids the time, expense, and uncertainty of a full trial on the merits.

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### United States v. AT&T, Inc.

916 F.3d 1029 (D.C. Cir. 2019)

ROGERS, Circuit Judge: On October 22, 2016, AT&T Inc. announced a proposed merger with Time Warner Inc. The government sued to enjoin this vertical merger under Section 7 of the Clayton Act, 15 U.S.C. § 18, and now appeals the denial of its request for a permanent injunction. . . . [T]he government on appeal challenges only the district court's findings on its increased leverage theory whereby costs for Turner Broadcasting System's content would increase after the merger, principally through threats of long-term "blackouts" during affiliate negotiations.

At trial, the government presented expert opinion on the likely anticompetitive effects of the proposed merger on the video programming and distribution industry as forecast by economic principles and a quantitative model. It also presented statements by the defendants in administrative proceedings about the anticompetitive effects of a proposed vertical merger in the industry seven years earlier. The defendants responded with an expert's analysis of real-world data for prior vertical mergers in the industry that showed "no statistically significant effect on content prices." The government offered no comparable analysis of data and its expert opinion and modeling predicting such increases failed to take into account Turner Broadcasting System's post-litigation irrevocable offers of no-blackout arbitration agreements, which a government expert acknowledged would require a new model. Evidence also indicated that the industry had become dynamic in recent years with the emergence, for example, of Netflix and

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Hulu. In this evidentiary context, the government's objections that the district court misunderstood and misapplied economic principles and clearly erred in rejecting the quantitative model are unpersuasive. Accordingly, we affirm.

I.

\*\*\* Neither the government nor the defendants challenge application of the burden-shifting framework in *United States v. Baker Hughes*, 908 F.2d 981, 982-83 (D.C. Cir. 1990), for horizontal mergers that the district court applied to consider the effect of the proposed vertical merger of AT&T and Time Warner on competition. Under this framework, the government must first establish a *prima facie* case that the merger is likely to substantially lessen competition in the relevant market. But unlike horizontal mergers, the government cannot use a short cut to establish a presumption of anti-competitive effect through statistics about the change in market concentration, because vertical mergers produce no immediate change in the relevant market share. . . . Instead, the government must make a "fact-specific" showing that the proposed merger is "likely to be anticompetitive." Joint Statement on the Burden of Proof at Trial at 3-4. Once the *prima facie* case is established, the burden shifts to the defendant to present evidence that the *prima facie* case "inaccurately predicts the relevant transaction's probable effect on future competition" or to "sufficiently discredit" the evidence underlying the *prima facie* case, *id.* Upon such rebuttal, "the burden of producing additional evidence of anticompetitive effects shifts to the government, and merges with the ultimate burden of persuasion, which remains with the government at all times.

The relevant market definition is also undisputed by the government and the defendants. The district court accepted the government's proposal that the product market is the market for multichannel video distribution. . . . The district court also accepted the government's proposed geographic market, which included over 1,100 local multichannel video distribution markets. . . .

. . . [T]he question for this court is whether the district court's factual findings are clearly erroneous. . . . \*\*\*

In Part II, we provide an overview of the video programming and distribution industry. Then, as relevant to the issues on appeal, we summarize the evidence before the district court and its findings. In Part III, we address the government's challenges to the district court's findings.

II.

A.

The video programming and distribution industry traditionally operates in a three-stage chain of production. Studios or networks create content. Then, programmers package content into networks and license those networks to video distributors. Finally, distributors sell bundles of networks to subscribers. For example, a studio may create a television show and sell it to Turner Broadcasting System ("Turner Broadcasting"), a programmer, which would package that television show into one of its networks, such as CNN or TNT. Turner Broadcasting would then license its networks to distributors, such as DirecTV or Comcast.

Programmers license their content to distributors through affiliate agreements, and distributors pay "affiliate fees" to programmers. Programmers and distributors engage in what are oftentimes referred to as "affiliate negotiations," which . . . can be lengthy and complicated. If a programmer and a distributor fail to reach an agreement, then

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the distributor will lose the rights to display the programmer's content to its customers. This situation, known as a "blackout" or "going dark," is generally costly for both the programmer, which loses affiliate fee revenues, and the distributor, which risks losing subscribers. Therefore, blackouts rarely occur, and long-term blackouts are especially rare. The evidence indicated, however, that programmers and distributors often threaten blackouts as a negotiating tactic, and both may perform "go dark" analyses to estimate the potential impact of a blackout in preparation for negotiations.

The evidence before the district court also showed that the industry has been changing in recent years. Multichannel video programming distributors ("MVPDs") . . . distribute channels to subscribers on cable or by satellite. Recently, "virtual" MVPDs have also emerged. They distribute live videos and on-demand videos to subscribers over the internet and compete with traditional MVPDs for subscribers. Virtual MVPDs, such as DirecTV Now and YouTube TV, have been gaining market share . . .

In addition, subscription video on demand services ("SVODs") have also emerged on the market. SVODs, such as Netflix, do not offer live video content but have large libraries of content that a viewer may access on demand. SVODs also offer low-cost subscription plans and have been gaining market share recently. Increasingly, cable customers are "cutting the cord" and terminating MVPD service altogether. . . .

Leading SVODs are vertically integrated, which means they create content and also distribute it. Traditional MVPDs typically are not vertically integrated with programmers. In 2009, however, Comcast Corporation ("Comcast") (a distributor and the largest cable company in the United States) announced a \$30 billion merger with NBC Universal, Inc. ("NBCU") (a content creator and programmer), whereby it would control popular video programming that included the NBC broadcast network and the cable networks of NBC Universal, Inc. The government sued to permanently enjoin the merger under Section 7, alleging that Comcast's "majority control of highly valued video programming ... would prevent rival video-distribution companies from competing against the post-merger entity." The district court, with the defendants' agreement and at the government's urging, allowed the merger to proceed subject to certain remedies for the alleged anticompetitive conduct post-merger, including remedies ordered in a related proceeding before the Federal Communications Commission ("FCC"). One remedy in the Comcast-NBCU merger was an agreement by the defendants to submit, at a distributor's option, to "baseball style" arbitration — in which each side makes a final offer and the arbitrator chooses between them — if parties did not reach a renewal agreement. During the arbitration, the distributor would retain access to NBC content, thereby mitigating concerns that Comcast-NBCU may withhold NBC programming during negotiations in order to benefit Comcast's distribution subscriptions. Comcast-NBCU currently operates as a "vertically integrated" programmer and distributor.

. . . . AT&T Inc. announced its plan to acquire Time Warner Inc. ("Time Warner") as part of a \$108 billion transaction. AT&T Inc. is a distribution company with two traditional MVPD products: DirecTV and U-verse. DirecTV transmits programming over satellite, while U-verse transmits programming over cable. Time Warner, by contrast, is a content creator and programmer and has three units: Warner Bros., Turner Broadcasting, and Home Box Office Programming ("HBO"). Warner Bros. creates movies, television shows, and other video programs. Turner Broadcasting packages

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content into various networks, such as TNT, TBS, and CNN, and licenses its networks to third-party MVPDs. HBO is a “premium” network that provides on-demand content to subscribers either directly through HBO Now or through licenses with third-party distributors. The merged firm would operate both AT&T MVPDs (DirecTV and U-verse) and Turner Broadcasting networks (which license to other MVPDs). . . .

A week after the government filed suit to stop the proposed merger, Turner Broadcasting sent letters to approximately 1,000 distributors “irrevocably offering” to engage in “baseball style” arbitration at any time within a seven-year period, subject to certain conditions not relevant here. . . . In the event of a failure to agree on renewal terms, Turner Broadcasting agreed that the distributor would have the right to continue carrying Turner networks pending arbitration, subject to the same terms and conditions in the distributor’s existing contract.

B.

The government’s increased leverage theory is that “by combining Time Warner’s programming and DirecTV’s distribution, the merger would give Time Warner increased bargaining leverage in negotiations with rival distributors, leading to higher, supracompetitive prices for millions of consumers.” Under this theory, Turner Broadcasting’s bargaining position in affiliate negotiations will change after the merger due to its relationship with AT&T because the cost of a blackout will be lower. Prior to the merger, if Turner Broadcasting failed to reach a deal with a distributor and engaged in a long-term blackout, then it would lose affiliate fees and advertising revenues. After the merger, some costs of a blackout would be offset because some customers would leave the rival distributor due to Turner Broadcasting’s blackout and a portion of those customers would switch to AT&T distributor services. The merged AT&T-Turner Broadcasting entity would earn a profit margin on these new customers. Because Turner Broadcasting would make a profit from switched customers, the cost of a long-term blackout would decrease after the merger and thereby give it increased bargaining leverage during affiliate negotiations with rival distributors sufficient to enable it to secure higher affiliate fees from distributors, which would result in higher prices for consumers.

The government also presented . . . [expert testimony] on the likely anticompetitive effect of the proposed merger. He opined, based on the economic theory of bargaining — here, the Nash bargaining theory — that Turner Broadcasting’s bargaining leverage would increase after the merger because the cost of a long-term blackout would decrease. His quantitative model predicted net price increases to consumers. Specifically, his model predicted increases in fees paid by rival distributors for Turner Broadcasting content and cost savings for AT&T through elimination of double marginalization (“EDM”). The fee increases for rival distributors were based on the expected benefit to AT&T of a Turner Broadcasting blackout after the merger. . . .

AT&T responded by pointing to testimony of executives’ past experience in affiliate negotiations, and presenting testimony by its experts . . . [that] critiqued the “inputs” used by [the government’s; expert] in his quantitative model, opining for instance that values he used for subscriber loss rate and diversion rate were not calculated through reliable methods. . . .

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The district court . . . concluded that the government failed to present persuasive evidence that Turner Broadcasting's bargaining leverage would "materially increase" as a result of the merger or that the merger would lead to "any raised costs" for rival distributors or consumers. It therefore did not address the . . . question whether any increased costs would result in a substantial lessening of competition.

III.

On appeal, the government contends that the district court court (1) misapplied economic principles, (2) used internally inconsistent logic when evaluating industry evidence, and (3) clearly erred in rejecting [its expert's] quantitative model. . . .

(1) Application of economic principles. The government contends that in evaluating the evidence in support of its increased leverage theory, the district court erroneously discarded or otherwise misapplied two economic principles — the Nash bargaining theory and corporate-wide profit maximization.

(a) Nash bargaining theory. The Nash bargaining theory is used to analyze two-party bargaining situations, specifically where both parties are ultimately better off by reaching an agreement. John F. Nash, Jr., *The Bargaining Problem*, 18 *Econometrica* 155 (1950). The theory posits that an important factor affecting the ultimate agreement is each party's relative loss in the event the parties fail to agree: when a party would have a greater loss from failing to reach an agreement, the other party has increased bargaining leverage. In other words, the relative loss for each party affects bargaining leverage and when a party has more bargaining leverage, that party is more likely to achieve a favorable price in the negotiation.

The district court had to determine whether the economic theory applied to the particular market by considering evidence about the "structure, history, and probable future" of the video programming and distribution industry. . . . The district court concluded that the government presented insufficient real-world evidence to support the prediction under the Nash bargaining theory of a material increase of Turner Broadcasting's post-merger bargaining leverage in affiliate negotiations by reason of less-costly long-term blackouts. The government's real-world evidence consisted of statements by AT&T Inc. and DirecTV in FCC regulatory filings that vertical integration, such as in the proposed Comcast-NBCU merger, can give distributors an incentive to charge higher affiliate fees and expert opinion and a quantitative model prepared by [its expert]. The expert opinion and model were subject to deficiencies identified by AT&T's experts, some of which [the government's expert] conceded. By contrast, AT&T's expert's econometric analysis of real-world data showed that content pricing in prior vertical mergers in the industry had not increased as the Nash bargaining theory and the model predicted. Given evidence the industry was now "remarkably dynamic," the district court credited CEO testimony about the null effect of vertical integration on affiliate negotiations..

In other words, the record shows that the district court accepted the Nash bargaining theory as an economic principle generally but rejected its specific prediction in light of the evidence that the district court credited. . . .

More concerning is the government's contention that the district court misapplied the Nash bargaining theory in a manner that negated its acceptance of the economics of bargaining by erroneously focusing on whether long-term blackouts would actually occur after the merger, rather than on the changes in stakes of such a blackout for

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Turner Broadcasting. The government points to the district court's statements . . . that "a blackout would be infeasible." The district court also stated that "there has never been, and is likely never going to be, an actual long-term blackout of Turner [Broadcasting] content". . . .

The question posed by the Nash bargaining theory is whether Turner Broadcasting would be more favorably positioned after the merger to assert its leverage in affiliate negotiations whereby the cost of its content would increase. Considered in isolation, the district court's statements could be viewed as addressing the wrong question. Considered as part of the district court's analysis of whether the stakes for Turner Broadcasting would change and if so by how much, the statements address whether the threat of long-term blackouts would be credible, as posited by the government's increased leverage theory. The district court found that after the merger the stakes for Turner Broadcasting would change only slightly, so its threat of a long-term blackout "will only be somewhat less incredible". . . . [T]he district court rejected the assumption underlying the government's theory that Turner Broadcasting would gain increased leverage from this slight change in stakes. . . .

The district court's statements identified by the government, then, do not indicate that the district court misunderstood or misapplied the Nash bargaining theory but rather, upon considering whether in the context of a dynamic market where a similar merger had not resulted in a "statistically significant increase in content costs," the district court concluded that the theory inaccurately predicted the post-merger increase in content costs during affiliate negotiations.

. . . The district court reasoned that because long-term blackouts are very costly and would therefore be infeasible for Turner Broadcasting even after the merger, there was insufficient evidence that "a post-merger Turner [Broadcasting] would, or even could, drive up prices by *threatening* distributors with long-term blackouts". . . . [T]he district court reached a fact-specific conclusion based on real-world evidence that, contrary to the Nash bargaining theory and government expert opinion on increased content costs, the post-merger cost of a long-term blackout would not sufficiently change to enable Turner Broadcasting to secure higher affiliate fees. . . .

Not to be overlooked, the district court also credited the efficacy of Turner Broadcasting's "irrevocable" offer of arbitration agreements with a no-blackout guarantee. It characterized the no-blackout agreements as "extra icing on a cake already frosted". . . . [T]he district court explained that it was appropriate to consider the analysis of the Comcast-NBCU merger because the Comcast-NBCU merger was similar to the proposed merger — a vertical merger in the video programming and distribution industry. There the government had recognized, "especially in vertical mergers, that conduct remedies, such as the ones proposed [in the *Comcast* case], can be a very useful tool to address the competitive problems while preserving competition and allowing efficiencies that may result from the transaction." Like there, the district court concluded the Turner arbitration agreements would have "real-world effect."

\* \* \*

(b) Corporate-wide profit maximization. Still, the government maintains that the reliance on past negotiation experience indicates that the district court misunderstood, and failed to apply, the principle of corporate-wide profit maximization by treating the principle as a question of fact, when "[t]he assumption of profit maximization is `cu-

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cial' in predicting business behavior." Appellant Br. 50 (citation omitted). This principle posits that a business with multiple divisions will seek to maximize its total profits. It was adopted as a principle of antitrust law in *Copperweld Corp. v. Independence Tube Corp.*, [467 U.S. 752, 771](#) (1984), holding that a parent and a wholly-owned subsidiary are not capable of conspiracy against each other under Section 1 of the Sherman Antitrust Act. Companies with multiple divisions must be viewed as a single actor, and each division will act to pursue the common interests of the whole corporation.

The . . . government's position that the district court never accepted this economic principle overlooks that it did "accept [the expert's] (and the Government's) argument that generally, 'a firm with multiple divisions will act to maximize profits across them.'" And it ignores that if the merged firm was unable to exert the leverage required by the government's increased leverage theory, then inquiring (as the district court did of [the government's expert]) about an independent basis to conclude that the firm did have such leverage is not a rejection of the corporate-wide profit maximization principle.

The government maintains that the district court's misapplication of the principle of corporate-wide profit maximization is evident from its statement the evidence suggests "vertically integrated corporations have previously determined that the best way to increase company wide profits is for the programming and distribution components to separately maximize their respective revenues" . . . . The district court can be viewed as conveying its understanding that Turner Broadcasting's interest in spreading its content among distributors, not imposing long-term blackouts, would redound to the merged firm's financial benefit, not that Turner Broadcasting would act in a manner contrary to the merged firm's financial benefit.

. . . [T]he government . . . gives no credence to the district court's focus on "the best way to increase company wide profits," referring to the merged firm. *AT&T*. In other words, the district court was explaining that real-world evidence reflected the profit-maximization principle. . . .

\* \* \* Similarly, contrary to the government's position, the district court's findings about post-merger negotiating are not internally inconsistent with its finding on the cost savings of the merger. The district court found, and the government agreed, that the merger would result in cost savings as a result of EDM. Pre-merger, both Turner Broadcasting and AT&T earned margins over cost before their products reached consumers: Turner Broadcasting earned a profit margin when it licensed content to AT&T, and AT&T earned a profit margin when it sold content to consumers. Post-merger, Turner Broadcasting would not earn a profit margin when licensing content to AT&T because the merged entity would eliminate that cost and . . . pass on some of those cost savings to consumers in order to attract additional subscribers. For there to be EDM savings, . . . the merged firm must act on its unified interest across divisions. Thus, Turner Broadcasting, instead of maximizing its own revenue, would license its programming to AT&T for a lower price. . . .

(2) Inconsistent reasoning in evaluating trial testimony. The government further maintains that the district court used internally inconsistent reasoning when evaluating testimony from witnesses in the industry.

At trial, third-party distributors and executives from Comcast-NBCU and Time Warner testified about negotiations in the video programming and distribution industry. Third-party distributors testified about their concerns, and their reasons, that

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Turner Broadcasting would gain increased bargaining leverage as a result of the proposed merger. . . . The district court declined to credit the third-party distributors' testimony because "there is a threat that [third-party distributor] testimony reflects self-interest" yet dismissed the suggestion that testimony from the Time Warner executives should be discounted as potentially biased due to self-interest.

The government contends this reasoning was inconsistent because self-interest existed on both sides of the issue of whether the proposed merger would have anticompetitive effects. Even so, the potential for self-interest was not the only reason the district court found third-party distributor testimony of little probative value. Much of the third-party competitor testimony, the district court found, "consisted of speculative concerns" and did not contain any analysis or factual basis to support key assumptions, such as how Turner Broadcasting's bargaining leverage would change and how many subscribers distributors would lose in a blackout. By contrast, the Time Warner executives' testimony did "not involve promises or speculations about the employees' future, post-merger behavior" and instead recounted "what these executives previously experienced when working within a vertically integrated company." Their testimony was uniform among all testifying witnesses and corroborated by that of a Comcast-NBCU executive — a competitor of AT&T. . . .

(3) Rejection of [the government expert's] quantitative model. Finally, the government contends that the district court clearly erred in rejecting [its expert's] quantitative bargaining model. . . .

Preliminarily, the court does not hold that quantitative evidence of price increase is required in order to prevail on a Section 7 challenge. Vertical mergers can create harms beyond higher prices for consumers, including decreased product quality and reduced innovation. Indeed, the Supreme Court upheld the Federal Trade Commission's Section 7 challenge to Ford Motor Company's proposed vertical merger with a major spark plug manufacturer without quantitative evidence about price increases. *Ford Motor Co. v. United States*, [405 U.S. 562, 567-69, 578](#) (1972). Here, however, the government did not present its challenge to the AT&T-Time Warner merger in terms of creating non-price related harms in the video programming and distribution industry.

. . . . The district court accepted [the government expert's] testimony about the \$352 million cost savings from the merger. But it found that insufficient evidence supported the inputs and assumptions used to estimate the annual costs increases for rival distributors . . . . Indeed, the district court found that the quantitative model . . . did not provide an adequate basis to conclude that the merger will lead to "any" raised costs for distributors or consumers, "much less consumer harms that outweigh the conceded \$350 million in annual cost savings to AT&T's customers."

Whatever errors the district court may have made in evaluating the inputs for [the expert's] quantitative model, the model did not take into account long-term contracts, which would constrain Turner Broadcasting's ability to raise content prices for distributors. The district court found that the real-world effects of Turner Broadcasting's existing contracts would be "significant" until 2021 and that it would be difficult to predict price increases farther into the future, particularly given that the industry is continually changing and experiencing increasing competition. This failure, the district court found, resulted in overestimation of how quickly the harms would occur. [The

expert] acknowledged that predictions farther into the future, after the long-term contracts expire, are more difficult. Neither [the expert's] opinion testimony nor his quantitative model considered the effect of the post-litigation offer of arbitration agreements, something he acknowledged would require a new model. And the video programming and distribution industry had experienced "ever-increasing competitiveness" in recent years. Taken together, the government's clear-error contention therefore fails.

\* \* \*

Accordingly, because the district court did not abuse its discretion in denying injunctive relief, we affirm the district court's order denying a permanent injunction of the merger.

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in any employment decision by the institution, including employment through consulting or part-time opportunities, on the basis of—

(1) whether they are citizens or nationals of, or holders of a passport issued by, a member country of, or a state or other jurisdiction that receives assistance from, the international financial institution; or

(2) any other consideration that, in the determination of the Secretary, unfairly disadvantages Taiwan nationals with respect to employment at the institution.

(c) **WAIVER AUTHORITY.**—The Secretary of the Treasury may waive subsection (b) for not more than 1 year at a time after reporting to the Committee on Financial Services of the House of Representatives and the Committee on Foreign Relations of the Senate that providing the waiver—

Time period.

(1) will substantially promote the objective of equitable treatment for Taiwan nationals at the international financial institutions; or

(2) is in the national interest of the United States, with a detailed explanation of the reasons therefor.

(d) **PROGRESS REPORT.**—The Chairman of the National Advisory Council on International Monetary and Financial Policies shall submit to the committees specified in subsection (c) an annual report, in writing, that describes the progress made toward advancing the policy described in subsection (b), and a summary of employment trends with respect to Taiwan nationals at the international financial institutions.

(e) **INTERNATIONAL FINANCIAL INSTITUTION DEFINED.**—In this section, the term “international financial institutions” has the meaning given the term in section 1701(c)(2) of the International Financial Institutions Act (22 U.S.C. 262r(c)(2)).

(f) **SUNSET.**—The preceding provisions of this section shall have no force or effect beginning on the earlier of—

(1) the date that is 7 years after the date of the enactment of this Act; or

(2) the date that the Secretary of the Treasury reports to the committees specified in subsection (c) that each international financial institution has adopted the policy described in subsection (b).

## TITLE XCIX—CREATING HELPFUL INCENTIVES TO PRODUCE SEMICONDUCTORS FOR AMERICA

Sec. 9901. Definitions.

Sec. 9902. Semiconductor incentives.

Sec. 9903. Department of Defense.

Sec. 9904. Department of Commerce study on status of microelectronics technologies in the United States industrial base.

Sec. 9905. Funding for development and adoption of measurably secure semiconductors and measurably secure semiconductors supply chains.

Sec. 9906. Advanced microelectronics research and development.

Sec. 9907. Prohibition relating to foreign entities of concern.

Sec. 9908. Defense Production Act of 1950 efforts.

### SEC. 9901. DEFINITIONS.

15 USC 4651.

In this title:

(1) The term “appropriate committees of Congress” means—

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(A) the Select Committee on Intelligence, the Committee on Energy and Natural Resources, the Committee on Commerce, Science, and Transportation, the Committee on Foreign Relations, the Committee on Armed Services, the Committee on Appropriations, the Committee on Banking, Housing, and Urban Affairs, the Committee on Homeland Security and Governmental Affairs, and the Committee on Finance of the Senate; and

(B) the Permanent Select committee on Intelligence, the Committee on Energy and Commerce, the Committee on Foreign Affairs, the Committee on Armed Services, the Committee on Science, Space, and Technology, the Committee on Appropriations, the Committee on Financial Services, the Committee on Homeland Security, and the Committee on Ways and Means of the House of Representatives..

(2) The term “covered entity” means a private entity, a consortium of private entities, or a consortium of public and private entities with a demonstrated ability to substantially finance, construct, expand, or modernize a facility relating to fabrication, assembly, testing, advanced packaging, or research and development of semiconductors.

(3) The term “covered incentive”:

(A) means an incentive offered by a governmental entity to a covered entity for the purposes of constructing within the jurisdiction of the governmental entity, or expanding or modernizing an existing facility within that jurisdiction, a facility described in paragraph (2); and

(B) a workforce-related incentive (including a grant agreement relating to workforce training or vocational education), any concession with respect to real property, funding for research and development with respect to semiconductors, and any other incentive determined appropriate by the Secretary, in consultation with the Secretary of State.

(4) The term “person” includes an individual, partnership, association, corporation, organization, or any other combination of individuals.

(5) The term “foreign entity”—

(A) means—

(i) a government of a foreign country and a foreign political party;

(ii) a natural person who is not a lawful permanent resident of the United States, citizen of the United States, or any other protected individual (as such term is defined in section 274B(a)(3) of the Immigration and Nationality Act (8 U.S.C. 1324b(a)(3)); or

(iii) a partnership, association, corporation, organization, or other combination of persons organized under the laws of or having its principal place of business in a foreign country; and

(B) includes—

(i) any person owned by, controlled by, or subject to the jurisdiction or direction of a an entity listed in subparagraph (A);

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(ii) any person, wherever located, who acts as an agent, representative, or employee of an entity listed in subparagraph (A);

(iii) any person who acts in any other capacity at the order, request, or under the direction or control, of an entity listed in subparagraph (A), or of a person whose activities are directly or indirectly supervised, directed, controlled, financed, or subsidized in whole or in majority part by an entity listed in subparagraph (A);

(iv) any person who directly or indirectly through any contract, arrangement, understanding, relationship, or otherwise, owns 25 percent or more of the equity interests of an entity listed in subparagraph (A);

(v) any person with significant responsibility to control, manage, or direct an entity listed in subparagraph (A);

(vi) any person, wherever located, who is a citizen or resident of a country controlled by an entity listed in subparagraph (A); or

(vii) any corporation, partnership, association, or other organization organized under the laws of a country controlled by an entity listed in subparagraph (A).

(6) The term “foreign entity of concern” means any foreign entity that is—

(A) designated as a foreign terrorist organization by the Secretary of State under section 219 of the Immigration and Nationality Act (8 U.S.C. 1189);

(B) included on the list of specially designated nationals and blocked persons maintained by the Office of Foreign Assets Control of the Department of the Treasury;

(C) owned by, controlled by, or subject to the jurisdiction or direction of a government of a foreign country that is listed in section 2533c of title 10, United States Code; or

(D) alleged by the Attorney General to have been involved in activities for which a conviction was obtained under—

(i) chapter 37 of title 18, United States Code (commonly known as the “Espionage Act”) (18 U.S.C. 792 et seq.);

(ii) section 951 or 1030 of title 18, United States Code;

(iii) chapter 90 of title 18, United States Code (commonly known as the “Economic Espionage Act of 1996”);

(iv) the Arms Export Control Act (22 U.S.C. 2751 et seq.);

(v) sections 224, 225, 226, 227, or 236 of the Atomic Energy Act of 1954 (42 U.S.C. 2274–2278; 2284);

(vi) the Export Control Reform Act of 2018 (50 U.S.C. 4801 et seq.); or

(vii) the International Economic Emergency Powers Act (50 U.S.C. 1701 et seq.); or

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Determination.  
Consultation.

(E) determined by the Secretary, in consultation with the Secretary of Defense and the Director of National Intelligence, to be engaged in unauthorized conduct that is detrimental to the national security or foreign policy of the United States under this Act.

(7) The term “governmental entity” means a State or local government.

(8) The term “Secretary” means the Secretary of Commerce.

(9) The term “semiconductor” has the meaning given that term by the Secretary.

15 USC 4652.

**SEC. 9902. SEMICONDUCTOR INCENTIVES.**

(a) FINANCIAL ASSISTANCE PROGRAM.—

(1) IN GENERAL.—The Secretary shall establish in the Department of Commerce a program that, in accordance with the requirements of this section and subject to the availability of appropriations for such purposes, provides Federal financial assistance to covered entities to incentivize investment in facilities and equipment in the United States for semiconductor fabrication, assembly, testing, advanced packaging, or research and development.

(2) PROCEDURE.—

(A) IN GENERAL.—A covered entity shall submit to the Secretary an application that describes the project for which the covered entity is seeking financial assistance under this section.

(B) ELIGIBILITY.—In order for a covered entity to qualify for financial assistance under this section, the covered entity shall demonstrate to the Secretary, in the application submitted by the covered entity under subparagraph (A), that—

(i) the covered entity has a documented interest in constructing, expanding, or modernizing a facility described in paragraph (1); and

(ii) with respect to the project described in clause (i), the covered entity has—

(I) been offered a covered incentive;

(II) made commitments to worker and community investment, including through—

(aa) training and education benefits paid by the covered entity; and

(bb) programs to expand employment opportunity for economically disadvantaged individuals; and

(III) secured commitments from regional educational and training entities and institutions of higher education to provide workforce training, including programming for training and job placement of economically disadvantaged individuals; and

(IV) an executable plan to sustain the facility described in clause (i) without additional Federal financial assistance under this subsection for facility support.

(C) CONSIDERATIONS FOR REVIEW.—With respect to the review by the Secretary of an application submitted by a covered entity under subparagraph (A)—

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(i) the Secretary may not approve the application unless the Secretary—

(I) confirms that the covered entity has satisfied the eligibility criteria under subparagraph (B);

(II) determines that the project to which the application relates is in the interest of the United States; and

Determination.

(III) has notified the appropriate committees of Congress not later than 15 days before making any commitment to provide a grant to any covered entity that exceeds \$10,000,000; and

Notification.  
Deadline.

(ii) the Secretary may consider whether—

(I) the covered entity has previously received financial assistance made under this subsection;

(II) the governmental entity offering the applicable covered incentive has benefitted from financial assistance previously provided under this subsection;

(III) the covered entity has demonstrated that they are responsive to the national security needs or requirements established by the Intelligence Community (or an agency thereof), the National Nuclear Security Administration, or the Department of Defense; and

(IV) when practicable, a consortium that is considered a covered entity includes a small business concern, as defined under section 3 of the Small Business Act (15 U.S.C. 632), notwithstanding section 121.103 of title 13, Code of Federal Regulations; and

(iii) the Secretary may not approve an application if the Secretary determines that the covered entity is a foreign entity of concern.

Determination.

(D) RECORDS.—The Secretary may request records and information from the applicant to review the status of a covered entity. The applicant shall provide the records and information requested by the Secretary.

(3) AMOUNT.—

(A) IN GENERAL.—The Secretary shall determine the appropriate amount and funding type for each financial assistance award made to a covered entity under this subsection.

Determination.

(B) LARGER INVESTMENT.—Federal investment in any individual project shall not exceed \$3,000,000,000 unless the Secretary, in consultation with the Secretary of Defense and the Director of National Intelligence, recommends to the President, and the President certifies and reports to the appropriate committees of Congress, that a larger investment is necessary to—

Consultation.  
Recommendation.  
President.  
Certification.  
Reports.

(i) significantly increase the proportion of reliable domestic supply of semiconductors relevant for national security and economic competitiveness that can be met through domestic production; and

(ii) meet the needs of national security.

(4) USE OF FUNDS.—A covered entity that receives a financial assistance award under this subsection may only use the financial assistance award amounts to—

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Determination.

(A) finance the construction, expansion, or modernization of a facility or equipment to be used for semiconductors described in paragraph (1), as documented in the application submitted by the covered entity under paragraph (2)(B), as determined necessary by the Secretary for purposes relating to the national security and economic competitiveness of the United States;

(B) support workforce development for a facility described in subparagraph (A);

(C) support site development and modernization for a facility described in subparagraph (A); and

(D) pay reasonable costs related to the operating expenses for a facility described in subparagraph (A), including specialized workforce, essential materials, and complex equipment maintenance, as determined by the Secretary.

(5) CLAWBACK.—

(A) TARGET DATES.—For all major awards to covered entities, the Secretary shall—

Determination.

(i) determine target dates by which a project shall commence and complete; and

(ii) set these dates by the time of award.

(B) PROGRESSIVE RECOVERY FOR DELAYS.—If the project does not commence and complete by the set target dates in (A), the Secretary shall progressively recover up to the full amount of an award provided to a covered entity under this subsection.

(C) TECHNOLOGY CLAWBACK.—The Secretary shall recover the full amount of an award provided to a covered entity under this subsection if, during the applicable term with respect to the award, the covered entity knowingly engages in any joint research or technology licensing effort—

(i) with a foreign entity of concern; and

(ii) that relates to a technology or product that raises national security concerns, as determined by the Secretary and communicated to the covered entity before engaging in such joint research or technology licensing.

(D) WAIVER.—In the case of delayed projects, the Secretary may waive elements of the clawback provisions incorporated in each major award after—

Determination.

(i) making a formal determination that circumstances beyond the ability of the covered entity to foresee or control are responsible for delays; and

(ii) submitting congressional notification.

(E) CONGRESSIONAL NOTIFICATION.—The Secretary shall notify appropriate committees of Congress—

Deadline.

(i) of the clawback provisions attending each such major award; and

(ii) of any waivers provided, not later than 15 days after the date on which such a waiver was provided.

(b) COORDINATION REQUIRED.—In carrying out the program established under subsection (a), the Secretary shall coordinate with the Secretary of State, the Secretary of Defense, the Secretary

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of Homeland Security, the Secretary of Energy, and the Director of National Intelligence.

(c) GAO REVIEWS.—The Comptroller General of the United States shall—

(1) not later than 2 years after the date of disbursement of the first financial award under subsection (a), and biennially thereafter for 10 years, conduct a review of the program established under subsection (a), which shall include, at a minimum—

Deadline.  
Time period.

(A) a determination of the number of instances in which financial assistance awards were provided under that subsection during the period covered by the review;

Determination.

(B) an evaluation of how—

Evaluation.

(i) the program is being carried out, including how recipients of financial assistance awards are being selected under the program; and

(ii) other Federal programs are leveraged for manufacturing, research, and training to complement the financial assistance awards awarded under the program; and

(C) a description of the outcomes of projects supported by awards made under the program, including a description of—

(i) facilities described in subsection (a)(1) that were constructed, expanded, or modernized as a result of awards made under the program;

(ii) research and development carried out with awards made under the program;

(iii) workforce training programs carried out with awards made under the program, including efforts to hire individuals from disadvantaged populations; and

(iv) the impact of projects on the United States share of global microelectronics production; and

(2) submit to the appropriate committees of Congress the results of each review conducted under paragraph (1).

**SEC. 9903. DEPARTMENT OF DEFENSE.**

15 USC 4653.

(a) DEPARTMENT OF DEFENSE EFFORTS.—

(1) IN GENERAL.—Subject to the availability of appropriations for such purposes, the Secretary of Defense, in consultation with the Secretary of Commerce, the Secretary of Energy, the Secretary of Homeland Security, and the Director of National Intelligence, shall establish a public-private partnership through which the Secretary shall work to incentivize the formation of one or more consortia of companies (or other such partnerships of private-sector entities, as appropriate) to ensure the development and production of measurably secure microelectronics, including integrated circuits, logic devices, memory, and the packaging and testing practices that support these microelectronic components by the Department of Defense, the intelligence community, critical infrastructure sectors, and other national security applications. Such incentives may include the use of grants under section 9902, and providing incentives for the creation, expansion, or modernization of one or more commercially competitive and sustainable microelectronics manufacturing or advanced research and development facilities in the United States.

Consultation.

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(2) RISK MITIGATION REQUIREMENTS.—A participant in a consortium formed with incentives under paragraph (1)—

(A) shall have the potential to enable design, perform fabrication, assembly, package, or test functions for microelectronics deemed critical to national security as defined by the National Security Advisor and the Secretary of Defense;

(B) may be a fabless company migrating its designs to the facility envisioned in paragraph (1) or migrating to an existing facility onshore;

(C) may be companies, including fabless companies and companies that procure large quantities of microelectronics, willing to co-invest to achieve the objectives set forth in paragraph (1);

(D) shall include management processes to identify and mitigate supply chain security risks; and

(E) shall be capable of providing microelectronic components that are consistent with applicable measurably secure supply chain and operational security standards established under section 224(b) of the National Defense Authorization Act for Fiscal Year 2020 (Public Law 116–92).

(3) NATIONAL SECURITY CONSIDERATIONS.—The Secretary of Defense and the Director of National Intelligence shall select participants for each consortium and or partnership formed with incentives under paragraph (1). In selecting such participants, the Secretary and the Director may jointly consider whether the companies—

(A) have participated in previous programs and projects of the Department of Defense, Department of Energy, or the intelligence community, including—

(i) the Trusted Integrated Circuit program of the Intelligence Advanced Research Projects Activity;

(ii) trusted and assured microelectronics projects, as administered by the Department of Defense;

(iii) the Electronics Resurgence Initiative program of the Defense Advanced Research Projects Agency; or

(iv) relevant semiconductor research programs of the Advanced Research Projects Agency–Energy;

(B) have demonstrated an ongoing commitment to performing contracts for the Department of Defense and the intelligence community;

(C) are approved by the Defense Counterintelligence and Security Agency or the Office of the Director of National Intelligence as presenting an acceptable security risk, taking into account supply chain assurance vulnerabilities, counterintelligence risks, and any risks presented by companies whose beneficial owners are located outside the United States; and

(D) are evaluated periodically for foreign ownership, control, or influence by a foreign entity of concern.

Determination.

(4) NONTRADITIONAL DEFENSE CONTRACTORS AND COMMERCIAL ENTITIES.—Arrangements entered into to carry out paragraph (1) shall be in such form as the Secretary of Defense determines appropriate to encourage industry participation of nontraditional defense contractors or commercial entities and



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may include a contract, a grant, a cooperative agreement, a commercial agreement, the use of other transaction authority under section 2371 of title 10, United States Code, or another such arrangement.

(5) IMPLEMENTATION.—Subject to the availability of appropriations for such purposes, the Secretary of Defense—

(A) shall carry out paragraph (1) jointly through the Office of the Under Secretary of Defense for Research and Engineering and the Office of the Under Secretary of Defense for Acquisition and Sustainment; and

(B) may carry out paragraph (1) in collaboration with any such other component of the Department of Defense as the Secretary of Defense considers appropriate.

(6) OTHER INITIATIVES.—

Consultations.

(A) REQUIRED INITIATIVES.—Subject to the availability of appropriations for such purposes, the Secretary of Defense, in consultation with the Secretary of Energy and the Administrator of the National Nuclear Security Administration, as appropriate, may dedicate initiatives within the Department of Defense to carry out activities to advance radio frequency, mixed signal, radiation tolerant, and radiation hardened microelectronics that support national security and dual-use applications.

(B) SUPPORT PLAN REQUIRED.—The Secretary of Defense, in consultation with the heads of appropriate departments and agencies of the Federal Government, shall develop a plan, including assessment of resource requirements and designation of responsible officials, for the maintenance of capabilities to produce trusted and assured microelectronics to support current and legacy defense systems, other government systems essential for national security, and critical infrastructure of the United States, especially for items with otherwise limited commercial demand.

Assessment.

(C) ASSESSMENT OF PUBLIC PRIVATE PARTNERSHIPS AND ACTIVITIES.—In conjunction with the activities carried out under this section, the Secretary of Defense shall enter into an agreement with the National Academies of Science, Engineering, and Medicine to undertake a study to make recommendations and provide policy options for optimal public-private partnerships and partnership activities, including an analysis of establishing a semiconductor manufacturing corporation to leverage private sector technical, managerial, and investment expertise, and private capital, as well as an assessment of and response to the industrial policies of other nations to support industries in similar critical technology sectors, and deliver such study to the congressional defense committees not later than October 1, 2022.

Contracts.  
Study.  
Recommendations.  
Analysis.  
Deadline.

(7) REPORTS.—

(A) REPORT BY SECRETARY OF DEFENSE.—Not later than 90 days after the date of the enactment of this Act, the Secretary of Defense shall submit to Congress a report on the plans of the Secretary to carry out paragraphs (1) and (6).

(B) BIENNIAL REPORTS BY COMPTROLLER GENERAL OF THE UNITED STATES.—Not later than one year after the date on which the Secretary submits the report required

Time period.

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by subparagraph (A) and not less frequently than once every two years thereafter for a period of 10 years, the Comptroller General of the United States shall submit to Congress a report on the activities carried out under this subsection.

(b) NATIONAL NETWORK FOR MICROELECTRONICS RESEARCH AND DEVELOPMENT.—

(1) IN GENERAL.—Subject to the availability of appropriations for such purposes, the Secretary of Defense may establish a national network for microelectronics research and development—

(A) to enable the laboratory to fabrication transition of microelectronics innovations in the United States; and

(B) to expand the global leadership in microelectronics of the United States.

(2) ACTIVITIES.—The national network for microelectronics research and development shall—

(A) enable cost effective exploration of new materials, devices, and architectures, and prototyping in domestic facilities to safeguard domestic intellectual property;

(B) accelerate the transition of new technologies to domestic microelectronics manufacturers; and

(C) conduct other relevant activities deemed necessary by the Secretary of Defense for accomplishing the purposes of the national network for microelectronics research and development.

15 USC 4654.

**SEC. 9904. DEPARTMENT OF COMMERCE STUDY ON STATUS OF MICROELECTRONICS TECHNOLOGIES IN THE UNITED STATES INDUSTRIAL BASE.**

Deadline.  
Consultation.

(a) IN GENERAL.—Beginning not later than 180 days after the date of the enactment of this Act, the Secretary, in consultation with the heads of other Federal departments and agencies, as appropriate, including the Secretary of Defense, Secretary of Homeland Security, and the Secretary of Energy, shall undertake a review, which shall include a survey, using authorities in section 705 of the Defense Production Act of 1950 (50 U.S.C. 4555), to assess the capabilities of the United States industrial base to support the national defense in light of the global nature of the supply chain and significant interdependencies between the United States industrial base and the industrial bases of foreign countries with respect to the manufacture, design, and end use of microelectronics.

(b) RESPONSE TO SURVEY.—To the extent authorized by section 705 of the Defense Production Act of 1950 (50 U.S.C. 4555) and section 702 of title 15, Code of Federal Regulations, the Secretary shall ensure all relevant potential respondents reply to the survey, including the following:

(1) Corporations, partnerships, associations, or any other organized groups domiciled and with substantial operations in the United States.

(2) Corporations, partnerships, associations, or any other organized groups with a physical presence of any kind in the United States.

(3) Foreign domiciled corporations, partnerships, associations, or any other organized groups with a physical presence of any kind in the United States.

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(c) INFORMATION REQUESTED.—To the extent authorized by section 705 of the Defense Production Act of 1950 (50 U.S.C. 4555) and section 702 of title 15, Code of Federal Regulations, the information sought from a responding entity specified in subsection (b) shall include, at minimum, information on the following with respect to the manufacture, design, or end use of microelectronics by such entity:

- (1) An identification of the geographic scope of operations.
- (2) Information on relevant cost structures.
- (3) An identification of types of microelectronics development, manufacture, assembly, test, and packaging equipment in operation at such an entity.
- (4) An identification of all relevant intellectual property, raw materials, and semi-finished goods and components sourced domestically and abroad by such an entity.
- (5) Specifications of the microelectronics manufactured or designed by such an entity, descriptions of the end-uses of such microelectronics, and a description of any technical support provided to end-users of such microelectronics by such an entity.
- (6) Information on domestic and export market sales by such an entity.
- (7) Information on the financial performance, including income and expenditures, of such an entity.
- (8) A list of all foreign and domestic subsidies, and any other financial incentives, received by such an entity in each market in which such entity operates. List.
- (9) A list of regulatory or other informational requests about the respondents’ operations, sales, or other proprietary information by the People’s Republic of China entities under its direction or officials of the Chinese Communist Party, a description of the nature of each request, and the type of information provided. List.
- (10) Information on any joint ventures, technology licensing agreements, and cooperative research or production arrangements of such an entity.
- (11) A description of efforts by such an entity to evaluate and control supply chain risks. Evaluation.
- (12) A list and description of any sales, licensing agreements, or partnerships between such an entity and the People’s Liberation Army or People’s Armed Police, including any business relationships with entities through which such sales, licensing agreements, or partnerships may occur. List.

(d) REPORT.—

(1) IN GENERAL.—The Secretary shall, in consultation with the heads of other appropriate Federal departments and agencies, as appropriate, including the Secretary of Defense, Secretary of Homeland Security, and Secretary of Energy, submit to Congress a report on the results of the review required by subsection (a). The report shall include the following: Consultation. Assessments.

(A) An assessment of the results of the review.

(B) A list of critical technology areas impacted by potential disruptions in production of microelectronics, and a detailed description and assessment of the impact of such potential disruptions on such areas. List.

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Classified information.

(C) A description and assessment of gaps and vulnerabilities in the microelectronics supply chain and the national industrial supply base.

(2) FORM.—The report required by paragraph (1) may be submitted in classified form.

15 USC 4655.

**SEC. 9905. FUNDING FOR DEVELOPMENT AND ADOPTION OF MEASURABLY SECURE SEMICONDUCTORS AND MEASURABLY SECURE SEMICONDUCTORS SUPPLY CHAINS.**

(a) MULTILATERAL SEMICONDUCTORS SECURITY FUND.—

(1) ESTABLISHMENT OF FUND.—The Secretary of the Treasury is authorized to establish a trust fund, to be known as the “Multilateral Semiconductors Security Fund” (in this section referred to as the “Fund”), consisting of any appropriated funds credited to the Fund for such purpose.

Coordination.

(2) REPORTING REQUIREMENT.—If the Fund authorized under subsection (a)(1) is not established, 180 days after the date of the enactment of this Act and annually thereafter until such Fund is established, the Secretary of the Treasury, in coordination with the Secretary of State, shall provide, in writing, to the appropriate committees of Congress a rationale for not establishing the Fund.

(3) INVESTMENT OF AMOUNTS.—

(A) INVESTMENT OF AMOUNTS.—If the Fund authorized under subsection (a)(1) is established, the Secretary of the Treasury shall invest such portion of the Fund as is not required to meet current withdrawals in interest-bearing obligations of the United States or in obligations guaranteed as to both principal and interest by the United States.

(B) INTEREST AND PROCEEDS.—The interest on, and the proceeds from the sale or redemption of, any obligations held in the Fund shall be credited to and form a part of the Fund.

(4) USE OF FUND.—

(A) IN GENERAL.—Subject to subparagraph (B), amounts in the Fund shall be available, as provided in advance in an appropriations Act, to the Secretary of State—

(i) to provide funding through the common funding mechanism described in subsection (b)(1) to support the development and adoption of measurably secure semiconductors and measurably secure semiconductors supply chains; and

(ii) to otherwise carry out this section.

Contracts.

(B) AVAILABILITY CONTINGENT ON INTERNATIONAL ARRANGEMENT OR AGREEMENT.—

(i) IN GENERAL.—Amounts in the Fund shall be available to the Secretary of State, subject to appropriation, on and after the date on which the Secretary of State enters into an arrangement or agreement with the governments of countries that are partners of the United States to participate in the common funding mechanism under paragraph (1) of subsection (b).

(ii) CONSULTATION.—Before entering into an arrangement or agreement as described clause (i), the Secretary of State, in consultation with the Secretary of Commerce, shall ensure any partner government

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maintains export control licensing policies on semiconductor technology substantively equivalent to the United States with respect to restrictions on such exports to the People’s Republic of China.

(b) COMMON FUNDING MECHANISM FOR DEVELOPMENT AND ADOPTION OF MEASURABLY SECURE SEMICONDUCTORS AND MEASURABLY SECURE SEMICONDUCTORS SUPPLY CHAINS.—

(1) IN GENERAL.—The Secretary of State, in consultation with the Secretary of Commerce, the Secretary of Defense, the Secretary of Homeland Security, the Secretary of the Treasury, the Secretary of Energy, and the Director of National Intelligence, is authorized to establish a common funding mechanism, in coordination with foreign partners, that uses amounts from the Fund to support the development and adoption of secure semiconductors and secure semiconductors supply chains, including for use in research and development collaborations among partner countries participating in the common funding mechanism. In establishing and sustaining a common funding mechanism, the Secretary of State should leverage United States funding in order to secure contributions and commitments from trusted foreign partners, including cost sharing and other cooperative measures leading to the development and adoption of secure semiconductors and secure micro-electronic supply chains.

Consultation.  
Coordination.

(2) COMMITMENTS.—In creating and sustaining a common funding mechanism described in paragraph (1), the Secretary of State should promote efforts among foreign partners to—

(A) establish transparency requirements for any subsidies or other financial benefits (including revenue foregone) provided to semiconductor firms located in or outside such countries;

(B) establish consistent policies with respect to countries that—

(i) are not participating in the common funding mechanism; and

(ii) do not meet transparency requirements established under subparagraph (A);

(C) promote harmonized treatment of semiconductors and verification processes for items being exported to a country considered a national security risk by a country participating in the common funding mechanism;

(D) establish consistent policies and common external policies to address nonmarket economies as the behavior of such countries pertains to semiconductors;

(E) align policies on supply chain integrity and semiconductors security, including with respect to protection and enforcement of intellectual property rights; and

(F) promote harmonized foreign direct investment screening measures and export control policies with respect to semiconductors to align with national, multilateral, and plurilateral security priorities.

(c) ANNUAL REPORT TO CONGRESS.—Not later than one year after the date of the enactment of this Act, and annually thereafter for each fiscal year during which amounts in the Fund are available under subsection (a)(4), the Secretary of State shall submit to the appropriate committees of Congress a report on the status

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of the implementation of this section that includes a description of—

(1) any commitments made by the governments of countries that have entered into an arrangement or agreement with the United States to provide funding for the common funding mechanism described in subsection (b)(1) and the specific amount so committed and other cooperative measures being taken by such countries as part of the common funding mechanism;

(2) the criteria established for expenditure of funds through the common funding mechanism;

(3) how, and to whom, amounts have been expended from the Fund and a description of progress made utilizing the Fund to support the objectives described in subsection (b)(1);

(4) amounts remaining in the Fund;

(5) the progress of the Secretary of State toward entering into an arrangement or agreement with the governments of countries that are partners of the United States to participate in the common funding mechanism and the commitments described in subsection (b)(2); and

(6) any additional authorities needed to enhance the effectiveness of the Fund in achieving the security goals of the United States.

(d) NOTIFICATIONS TO BE PROVIDED BY THE FUND.—

Reports.

(1) IN GENERAL.—Not later than 15 days prior to the Fund making a financial commitment associated with the provision of expenditures under subsection (a)(4)(A) in an amount in excess of \$1,000,000, the Secretary of State shall submit to the appropriate committees of Congress report in writing that contains the information required by paragraph (2).

(2) INFORMATION REQUIRED.—The information required by this subsection includes—

(A) the amount of each such expenditure;

(B) an identification of the recipient or beneficiary;

and

(C) a description of the project or activity and the purpose to be achieved by an expenditure of the Fund.

Contracts.  
Notification.  
Deadline.

(3) ARRANGEMENTS OR AGREEMENTS.—The Secretary of State shall notify the appropriate committees of Congress not later than 30 days after entering into a new bilateral or multilateral arrangement or agreement described in subsection (a)(4)(B).

15 USC 4656.

**SEC. 9906. ADVANCED MICROELECTRONICS RESEARCH AND DEVELOPMENT.**

President.

(a) SUBCOMMITTEE ON MICROELECTRONICS LEADERSHIP.—

(1) ESTABLISHMENT REQUIRED.—The President shall establish in the National Science and Technology Council a subcommittee on matters relating to leadership and competitiveness of the United States in microelectronics technology and innovation (in this section referred to as the “Subcommittee”).

(2) MEMBERSHIP.—The Subcommittee shall be composed of the following members:

(A) The Secretary of Defense.

(B) The Secretary of Energy.

(C) The Director of the National Science Foundation.

(D) The Secretary of Commerce.

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- (E) The Secretary of State.
- (F) The Secretary of Homeland Security.
- (G) The United States Trade Representative.
- (H) The Director of National Intelligence.

(I) The heads of such other departments and agencies of the Federal Government as the President determines appropriate.

(3) DUTIES.—The duties of the Subcommittee are as follows:

(A) NATIONAL STRATEGY ON MICROELECTRONICS RESEARCH.—

(i) IN GENERAL.—In consultation with the advisory committee established in (b), and other appropriate stakeholders in the microelectronics industry and academia, the Subcommittee shall develop a national strategy on microelectronics research, development, manufacturing, and supply chain security to—

(I) accelerate the domestic development and production of microelectronics and strengthen the domestic microelectronics workforce; and

(II) ensure that the United States is a global leader in the field of microelectronics research and development.

(ii) ELEMENTS.—The strategy developed under this subparagraph shall address—

(I) activities that may be carried out to strengthen engagement and outreach between the Department of Defense and industry, academia, international partners of the United States, and other departments and agencies of the Federal Government on issues relating to microelectronics;

(II) priorities for research and development to accelerate the advancement and adoption of innovative microelectronics and new uses of microelectronics and components;

(III) the role of diplomacy and trade in maintaining the position of the United States as a global leader in the field of microelectronics;

(IV) the potential role of a Federal laboratory, center, or incubator exclusively focused on the research and development of microelectronics, as described in section 231(b)(15) of the National Defense Authorization Act for Fiscal Year 2017 (as added by section 276 of this Act) in carrying out the strategy and plan required under this subparagraph; and

(V) such other activities as the Subcommittee determines may be appropriate to overcome future challenges to the innovation, competitiveness, and supply chain integrity of the United States in the field of microelectronics.

(B) FOSTERING COORDINATION OF RESEARCH AND DEVELOPMENT.—The Subcommittee shall coordinate microelectronics related research, development, manufacturing, and supply chain security activities and budgets of Federal agencies and ensure such activities are consistent with the strategy required under subparagraph (A).

(C) REPORTING AND UPDATES.—

Deadlines.—

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(i) **PROGRESS BRIEFING.**—Not later than one year after the date of the enactment of this Act, the President shall provide to the appropriate committees of Congress a briefing on the progress of the Subcommittee in developing the strategy required under subparagraph (A).

(ii) **STRATEGY UPDATE.**—Not less frequently than once every 5 years, the Subcommittee shall update the strategy developed under subparagraph (A) and submit the revised strategy to the appropriate committees of Congress.

(4) **SUNSET.**—The Subcommittee shall terminate on the date that is 10 years after the date of the enactment of this Act.

(b) **INDUSTRIAL ADVISORY COMMITTEE.**—

Consultation.

(1) **ESTABLISHMENT.**—The Secretary of Commerce, in consultation with the Secretary of Defense, the Secretary of Energy, and the Secretary of Homeland Security, shall establish an advisory committee to be composed of not fewer than 12 members, including representatives of industry, federal laboratories, and academic institutions, who are qualified to provide advice to the United States Government on matters relating to microelectronics research, development, manufacturing, and policy.

(2) **DUTIES.**—The advisory committee shall assess and provide guidance to the United States Government on—

(A) science and technology needs of the nation's domestic microelectronics industry;

(B) the extent to which the strategy developed under subsection (a)(3) is helping maintain United States leadership in microelectronics manufacturing;

(C) assessment of the research and development programs and activities authorized under this section; and

(D) opportunities for new public-private partnerships to advance microelectronics research, development, and domestic manufacturing.

(3) **FACA EXEMPTION.**—Section 14 of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the advisory committee established under this subsection.

(c) **NATIONAL SEMICONDUCTOR TECHNOLOGY CENTER.**—

(1) **ESTABLISHMENT.**—Subject to the availability of appropriations for such purpose, the Secretary of Commerce, in collaboration with the Secretary of Defense, shall establish a national semiconductor technology center to conduct research and prototyping of advanced semiconductor technology to strengthen the economic competitiveness and security of the domestic supply chain. Such center shall be operated as a public private-sector consortium with participation from the private sector, the Department of Energy, and the National Science Foundation.

(2) **FUNCTIONS.**—The functions of the center established under paragraph (1) shall be as follows:

(A) To conduct advanced semiconductor manufacturing, design and packaging research, and prototyping that strengthens the entire domestic ecosystem and is aligned with the strategy required under subsection (a)(3)(A) with emphasis on the following:



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(i) Semiconductor advanced test, assembly, and packaging capability in the domestic ecosystem.

(ii) Materials characterization, instrumentation and testing for next generation microelectronics.

(iii) Virtualization and automation of maintenance of semiconductor machinery.

(iv) Metrology for security and supply chain verification.

(B) To establish an investment fund, in partnership with the private sector, to support startups and collaborations between startups, academia, established companies, and new ventures, with the goal of commercializing innovations that contribute to the domestic semiconductor ecosystem, including—

(i) advanced metrology and characterization for manufacturing of microchips using 3 nanometer transistor processes or more advanced processes; and

(ii) metrology for security and supply chain verification.

(C) To work with the Secretary of Labor, the Director of the National Science Foundation, the Secretary of Energy, the private sector, institutions of higher education, and workforce training entities to incentivize and expand participation in graduate and undergraduate programs, and develop workforce training programs and apprenticeships, in advanced microelectronic design, research, fabrication, and packaging capabilities.

(d) NATIONAL ADVANCED PACKAGING MANUFACTURING PROGRAM.—Subject to the availability of appropriations for such purpose, the Secretary of Commerce shall establish a National Advanced Packaging Manufacturing Program led by the Director of the National Institute of Standards and Technology, in coordination with the national semiconductor technology center established under subsection (c), to strengthen semiconductor advanced test, assembly, and packaging capability in the domestic ecosystem, and which shall coordinate with the Manufacturing USA institute established under subsection (f), if applicable.

Coordination.

(e) MICROELECTRONICS RESEARCH AT THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.—Subject to the availability of appropriations for such purpose, the Director of the National Institute of Standards and Technology shall carry out a microelectronics research program to enable advances and breakthroughs in measurement science, standards, material characterization, instrumentation, testing, and manufacturing capabilities that will accelerate the underlying research and development for metrology of next generation microelectronics and ensure the competitiveness and leadership of the United States within this sector.

(f) CREATION OF A MANUFACTURING USA INSTITUTE.—Subject to the availability of appropriations for such purpose, the Director of the National Institute of Standards and Technology may establish a Manufacturing USA institute described in section 34(d) of the National Institute of Standards and Technology Act (15 U.S.C. 278s(d)) that is focused on semiconductor manufacturing. Such institute may emphasize the following:

(1) Research to support the virtualization and automation of maintenance of semiconductor machinery.

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(2) Development of new advanced test, assembly and packaging capabilities.

(3) Developing and deploying educational and skills training curricula needed to support the industry sector and ensure the United States can build and maintain a trusted and predictable talent pipeline.

(g) DOMESTIC PRODUCTION REQUIREMENTS.—The head of any executive agency receiving funding under this section shall develop policies to require domestic production, to the extent possible, for any intellectual property resulting from microelectronics research and development conducted as a result of such funding and domestic control requirements to protect any such intellectual property from foreign adversaries.

15 USC 4657.

**SEC. 9907. PROHIBITION RELATING TO FOREIGN ENTITIES OF CONCERN.**

None of the funds authorized to be appropriated to carry out this subtitle may be provided to a foreign entity of concern.

President.  
15 USC 4658.  
Reports.  
Action plan.

**SEC. 9908. DEFENSE PRODUCTION ACT OF 1950 EFFORTS.**

(a) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the President shall submit to Congress a report on a plan of action for any use of authorities available in title III of the Defense Production Act of 1950 (50 U.S.C. 4531 et seq.) to establish or enhance a domestic production capability for microelectronics technologies and related technologies, subject to—

Determination.

- (1) the availability of appropriations for that purpose; and
- (2) a determination made under the plan pursuant to such title III that such technologies are essential to the national defense and that domestic industrial capabilities are insufficient to meet these needs.

Consultation.

(b) COORDINATION.—The President shall develop the plan of action required by subsection (a) in consultation with any relevant head of a Federal agency, an advisory committee established under section 708(d) of the Defense Production Act of 1950 (50 U.S.C. 4558(d)), and appropriate stakeholders in the private sector.

**TITLE C—OTHER MATTERS**

Sec. 10001. AMBER Alert nationwide.

Sec. 10002. Improving authority for operation of unmanned aircraft for educational purposes.

Sec. 10003. Prohibition on provision of airport improvement grant funds to certain entities that have violated intellectual property rights of United States entities.

Sec. 10004. Study and report on the affordability of insulin.

Sec. 10005. Waiver authority with respect to institutions located in an area affected by Hurricane Maria.

Sec. 10006. Farm and ranch mental health.

**SEC. 10001. AMBER ALERT NATIONWIDE.**

(a) COOPERATION WITH DEPARTMENT OF HOMELAND SECURITY.—Subtitle A of title III of the PROTECT Act (34 U.S.C. 20501 et seq.) is amended—

34 USC 20501.

- (1) in section 301—
  - (A) in subsection (b)—

## Executive Order on America's Supply Chains

February 24, 2021

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

### Section 1. Policy.

The United States needs resilient, diverse, and secure supply chains to ensure our economic prosperity and national security. Pandemics and other biological threats, cyber-attacks, climate shocks and extreme weather events, terrorist attacks, geopolitical and economic competition, and other conditions can reduce critical manufacturing capacity and the availability and integrity of critical goods, products, and services. Resilient American supply chains will revitalize and rebuild domestic manufacturing capacity, maintain America's competitive edge in research and development, and create well-paying jobs. They will also support small businesses, promote prosperity, advance the fight against climate change, and encourage economic growth in communities of color and economically distressed areas.

More resilient supply chains are secure and diverse — facilitating greater domestic production, a range of supply, built-in redundancies, adequate stockpiles, safe and secure digital networks, and a world-class American manufacturing base and workforce. Moreover, close cooperation on resilient supply chains with allies and partners who share our values will foster collective economic and national security and strengthen the capacity to respond to international disasters and emergencies.

Therefore, it is the policy of my Administration to strengthen the resilience of America's supply chains.

### Sec. 2. Coordination.

The Assistant to the President for National Security Affairs (APNSA) and the Assistant to the President for Economic Policy (APEP) shall coordinate the executive branch actions necessary to implement this order through the interagency process identified in National Security Memorandum 2 of February 4, 2021 (Renewing the National Security Council System). In implementing this order, the heads of agencies should, as appropriate, consult outside stakeholders — such as those in industry, academia, non-governmental organizations, communities, labor unions, and State, local, and Tribal governments — in order to fulfill the policy identified in section 1 of this order.

### Sec. 3. 100-Day Supply Chain Review.

(a) To advance the policy described in section 1 of this order, the APNSA and the APEP, in coordination with the heads of appropriate agencies, as defined in section 6(a) of this order, shall complete a review of supply chain risks, as outlined in subsection (b) of this section, within 100 days of the date of this order.

(b) Within 100 days of the date of this order, the specified heads of agencies shall submit the following reports to the President, through the APNSA and the APEP:

(i) The Secretary of Commerce, in consultation with the heads of appropriate agencies, shall submit a report identifying risks in the semiconductor manufacturing and advanced packaging supply chains and policy recommendations to address these risks. The report shall include the items described in section 4(c) of this order.

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(ii) The Secretary of Energy, in consultation with the heads of appropriate agencies, shall submit a report identifying risks in the supply chain for high-capacity batteries, including electric-vehicle batteries, and policy recommendations to address these risks. The report shall include the items described in section 4(c) of this order.

(iii) The Secretary of Defense (as the National Defense Stockpile Manager), in consultation with the heads of appropriate agencies, shall submit a report identifying risks in the supply chain for critical minerals and other identified strategic materials, including rare earth elements (as determined by the Secretary of Defense), and policy recommendations to address these risks. The report shall also describe and update work done pursuant to Executive Order 13953 of September 30, 2020 (Addressing the Threat to the Domestic Supply Chain From Reliance on Critical Minerals From Foreign Adversaries and Supporting the Domestic Mining and Processing Industries). The report shall include the items described in section 4(c) of this order.

(iv) The Secretary of Health and Human Services, in consultation with the heads of appropriate agencies, shall submit a report identifying risks in the supply chain for pharmaceuticals and active pharmaceutical ingredients and policy recommendations to address these risks. The report shall complement the ongoing work to secure the supply chains of critical items needed to combat the COVID-19 pandemic, including personal protective equipment, conducted pursuant to Executive Order 14001 of January 21, 2021 (A Sustainable Public Health Supply Chain). The report shall include the items described in section 4(c) of this order.

(c) The APNSA and the APEP shall review the reports required under subsection (b) of this section and shall submit the reports to the President in an unclassified form, but may include a classified annex.

(d) The APNSA and the APEP shall include a cover memorandum to the set of reports submitted pursuant to this section, summarizing the reports' findings and making any additional overall recommendations for addressing the risks to America's supply chains, including the supply chains for the products identified in subsection (b) of this section.

#### Sec. 4. Sectoral Supply Chain Assessments.

(a) Within 1 year of the date of this order, the specified heads of agencies shall submit the following reports to the President, through the APNSA and the APEP:

(i) The Secretary of Defense, in consultation with the heads of appropriate agencies, shall submit a report on supply chains for the defense industrial base that updates the report provided pursuant to Executive Order 13806 of July 21, 2017 (Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States), and builds on the Annual Industrial Capabilities Report mandated by the Congress pursuant to section 2504 of title 10, United States Code. The report shall identify areas where civilian supply chains are dependent upon competitor nations, as determined by the Secretary of Defense.

(ii) The Secretary of Health and Human Services, in consultation with the heads of appropriate agencies, shall submit a report on supply chains for the public health and biological preparedness industrial base (as determined by the Secretary of Health and Human Services). The report shall complement the work conducted pursuant to section 4 of Executive Order 14001.

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(iii) The Secretary of Commerce and the Secretary of Homeland Security, in consultation with the heads of appropriate agencies, shall submit a report on supply chains for critical sectors and subsectors of the information and communications technology (ICT) industrial base (as determined by the Secretary of Commerce and the Secretary of Homeland Security), including the industrial base for the development of ICT software, data, and associated services.

(iv) The Secretary of Energy, in consultation with the heads of appropriate agencies, shall submit a report on supply chains for the energy sector industrial base (as determined by the Secretary of Energy).

(v) The Secretary of Transportation, in consultation with the heads of appropriate agencies, shall submit a report on supply chains for the transportation industrial base (as determined by the Secretary of Transportation).

(vi) The Secretary of Agriculture, in consultation with the heads of appropriate agencies, shall submit a report on supply chains for the production of agricultural commodities and food products.

(b) The APNSA and the APEP shall, as appropriate and in consultation with the heads of appropriate agencies, recommend adjustments to the scope for each industrial base assessment, including digital networks, services, assets, and data (“digital products”), goods, services, and materials that are relevant within more than one defined industrial base, and add new assessments, as appropriate, for goods and materials not included in the above industrial base assessments.

(c) Each report submitted under subsection (a) of this section shall include a review of:

(i) the critical goods and materials, as defined in section 6(b) of this order, underlying the supply chain in question;

(ii) other essential goods and materials, as defined in section 6(d) of this order, underlying the supply chain in question, including digital products;

(iii) the manufacturing or other capabilities necessary to produce the materials identified in subsections (c)(i) and (c)(ii) of this section, including emerging capabilities;

(iv) the defense, intelligence, cyber, homeland security, health, climate, environmental, natural, market, economic, geopolitical, human-rights or forced-labor risks or other contingencies that may disrupt, strain, compromise, or eliminate the supply chain — including risks posed by supply chains’ reliance on digital products that may be vulnerable to failures or exploitation, and risks resulting from the elimination of, or failure to develop domestically, the capabilities identified in subsection (c)(iii) of this section — and that are sufficiently likely to arise so as to require reasonable preparation for their occurrence;

(v) the resilience and capacity of American manufacturing supply chains and the industrial and agricultural base — whether civilian or defense — of the United States to support national and economic security, emergency preparedness, and the policy identified in section 1 of this order, in the event any of the contingencies identified in subsection (c)(iv) of this section occurs, including an assessment of:

(A) the manufacturing or other needed capacities of the United States, including the ability to modernize to meet future needs;

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- (B) gaps in domestic manufacturing capabilities, including nonexistent, extinct, threatened, or single-point-of-failure capabilities;
- (C) supply chains with a single point of failure, single or dual suppliers, or limited resilience, especially for subcontractors, as defined by section 44.101 of title 48, Code of Federal Regulations (Federal Acquisition Regulation);
- (D) the location of key manufacturing and production assets, with any significant risks identified in subsection (c)(iv) of this section posed by the assets' physical location;
- (E) exclusive or dominant supply of critical goods and materials and other essential goods and materials, as identified in subsections (c)(i) and (c)(ii) of this section, by or through nations that are, or are likely to become, unfriendly or unstable;
- (F) the availability of substitutes or alternative sources for critical goods and materials and other essential goods and materials, as identified in subsections (c)(i) and (c)(ii) of this section;
- (G) current domestic education and manufacturing workforce skills for the relevant sector and identified gaps, opportunities, and potential best practices in meeting the future workforce needs for the relevant sector;
- (H) the need for research and development capacity to sustain leadership in the development of critical goods and materials and other essential goods and materials, as identified in subsections (c)(i) and (c)(ii) of this section;
- (I) the role of transportation systems in supporting existing supply chains and risks associated with those transportation systems; and
- (J) the risks posed by climate change to the availability, production, or transportation of critical goods and materials and other essential goods and materials, as identified in subsections (c)(i) and (c)(ii) of this section.
- (vi) allied and partner actions, including whether United States allies and partners have also identified and prioritized the critical goods and materials and other essential goods and materials identified in subsections (c)(i) and (c)(ii) of this section, and possible avenues for international engagement. In assessing these allied and partner actions, the heads of agencies shall consult with the Secretary of State;
- (vii) the primary causes of risks for any aspect of the relevant industrial base and supply chains assessed as vulnerable pursuant to subsection (c)(v) of this section;
- (viii) a prioritization of the critical goods and materials and other essential goods and materials, including digital products, identified in subsections (c)(i) and (c)(ii) of this section for the purpose of identifying options and policy recommendations. The prioritization shall be based on statutory or regulatory requirements; importance to national security, emergency preparedness, and the policy set forth in section 1 of this order; and the review conducted pursuant to subsection (c)(v) of this section;
- (ix) specific policy recommendations for ensuring a resilient supply chain for the sector. Such recommendations may include sustainably reshoring supply chains and developing domestic supplies, cooperating with allies and partners to identify alternative supply chains, building redundancy into domestic supply chains, ensuring and enlarging stockpiles, developing workforce capabilities, enhancing access to financing, expanding research and development to broaden supply chains, addressing risks due to vulnerabilities in digital products relied on by supply chains, addressing risks posed by climate change, and any other recommendations;
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(x) any executive, legislative, regulatory, and policy changes and any other actions to strengthen the capabilities identified in subsection (c)(iii) of this section, and to prevent, avoid, or prepare for any of the contingencies identified in subsection (c)(iv) of this section; and

(xi) proposals for improving the Government-wide effort to strengthen supply chains, including proposals for coordinating actions required under this order with ongoing efforts that could be considered duplicative of the work of this order or with existing Government mechanisms that could be used to implement this order in a more effective manner.

(d) The APNSA and the APEP shall review the reports required under subsection (a) of this section and shall submit the reports to the President in an unclassified form, but may include a classified annex.

#### Sec. 5. General Review and Recommendations.

As soon as practicable following the submission of the reports required under section 4 of this order, the APNSA and the APEP, in coordination with the heads of appropriate agencies, shall provide to the President one or more reports reviewing the actions taken over the previous year and making recommendations concerning:

(a) steps to strengthen the resilience of America's supply chains;

(b) reforms needed to make supply chain analyses and actions more effective, including statutory, regulatory, procedural, and institutional design changes. The report shall include recommendations on whether additional offices, personnel, resources, statistical data, or authorities are needed;

(c) establishment of a quadrennial supply chain review, including processes and timelines regarding ongoing data gathering and supply chain monitoring;

(d) diplomatic, economic, security, trade policy, informational, and other actions that can successfully engage allies and partners to strengthen supply chains jointly or in coordination;

(e) insulating supply chain analyses and actions from conflicts of interest, corruption, or the appearance of impropriety, to ensure integrity and public confidence in supply chain analyses;

(f) reforms to domestic and international trade rules and agreements needed to support supply chain resilience, security, diversity, and strength;

(g) education and workforce reforms needed to strengthen the domestic industrial base;

(h) steps to ensure that the Government's supply chain policy supports small businesses, prevents monopolization, considers climate and other environmental impacts, encourages economic growth in communities of color and economically distressed areas, and ensures geographic dispersal of economic activity across all regions of the United States; and

(i) Federal incentives and any amendments to Federal procurement regulations that may be necessary to attract and retain investments in critical goods and materials and other essential goods and materials, as defined in sections 6(b) and 6(d) of this order, including any new programs that could encourage both domestic and foreign investment in critical goods and materials.

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Sec. 6. Definitions. For purposes of this order:

(a) “Agency” means any authority of the United States that is an “agency” under 44 U.S.C. 3502(1), other than those considered to be independent regulatory agencies, as defined in 44 U.S.C. 3502(5). “Agency” also means any component of the Executive Office of the President.

(b) “Critical goods and materials” means goods and raw materials currently defined under statute or regulation as “critical” materials, technologies, or infrastructure.

(c) “Critical minerals” has the meaning given to that term in Executive Order 13953 of September 30, 2020 (Addressing the Threat to the Domestic Supply Chain From Reliance on Critical Minerals From Foreign Adversaries and Supporting the Domestic Mining and Processing Industries).

(d) “Other essential goods and materials” means goods and materials that are essential to national and economic security, emergency preparedness, or to advance the policy set forth in section 1 of this order, but not included within the definition of “critical goods and materials.”

(e) “Supply chain,” when used with reference to minerals, includes the exploration, mining, concentration, separation, alloying, recycling, and reprocessing of minerals.

Sec. 7. General Provisions.

(a) Nothing in this order shall be construed to impair or otherwise affect

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

JOSEPH R. BIDEN JR.

THE WHITE HOUSE,

February 24, 2021.

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## Defense Department Releases Report on Strengthening Defense-Critical Supply Chains

Feb. 24, 2022

Today, the Department of Defense (DoD) released a strategic roadmap to address supply chain vulnerabilities in the defense industrial base (DIB). Executive Order (E.O.) 14017, America’s Supply Chains, directed Cabinet agencies to assess supply chains in sectors critical for America’s economic and national security. In the report, Securing Defense-Critical Supply Chains, DoD presents recommendations for high-priority areas in the DIB, with input from other agencies, the National Security Council (NSC) and National Economic Council (NEC).

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The report highlights the historic strength and value of America's supply chains, and reinforces the need for transformative investments in the 21st century to build greater supply chain resilience. It focuses specifically on addressing challenges in high-priority areas critical to operational readiness, including kinetic capabilities, energy storage and batteries, castings and forgings, microelectronics, and strategic and critical materials. The department also highlights a set of strategic enablers that underpin overall mission success and supply chain resilience, such as workforce, cyber posture, small business, and manufacturing capabilities.

"A clear national consensus has emerged around the need for bold action in support of supply chain resilience," said Andrew Hunter, who is performing the duties of the Under Secretary of Defense for Acquisition and Sustainment. "This report is a strategic roadmap for the department to build lasting resilience in our defense industrial base."

The department outlines not only a whole-of-government, but a whole-of-nation, strategy to assessing and strengthening supply chains critical to the DIB and overall U.S. national security. The strategy encompasses efforts needed internally within DoD, as well as those in collaboration with interagency, industry, and international partners and allies.

"Supply chain resiliency is vital to the Defense Department," said Deputy Secretary of Defense Dr. Kathleen Hicks. "We will prioritize cooperation with our defense industrial base and with all others who have a stake in our national and economic security to collaboratively safeguard global market integrity and strengthen defense-critical supply chains."

The report outlines a wide-ranging set of recommendations, including applied research, workforce development initiatives, policy and procedure reviews, and more. The department has already made significant investments in key industrial base sectors, and this report provides a blueprint for making further targeted investments to build supply chain resilience.

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## **Analysis for CHIPS Act and BIA Briefing**

U.S. Department of Commerce, April 6, 2022

Today, Secretary Raimondo and other administration officials briefed bipartisan members of Congress on the economic and national security vulnerability presented by a lack of domestic semiconductor production. Raimondo's briefing was based on the analysis below.

Semiconductors power nearly every new computer, smartphone, car, and the cloud servers that underpin the world economy and even the internet itself, as well as the advanced technologies and weapons systems critical for the national defense. Analysis by the Global Semiconductor Alliance shows that semiconductors contribute \$2.7 trillion directly and indirectly to global GDP. However, the vast majority of semiconductor production, including all production of advanced, or "leading-edge" semiconductors, occurs overseas by a limited number of foreign producers. Semiconductors are a strategic resource, and the United States must ensure that it can produce the chips that are so critical to our economic prosperity and national defense here at home.

Vulnerabilities and consolidation in U.S. semiconductor supply chains introduce significant economic and national security risks to the United States, as well as to our

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allies and partners. The COVID-19 pandemic triggered a semiconductor shortage, the effects of which have rippled out through the economy. Consulting firm AlixPartners projected that the chips shortage knocked a full one percent off of GDP growth in 2021, slowing the economy's historic recovery.

A lack of semiconductors forced auto manufacturers to idle production, shut down factories, and lay off workers. According to the Semiconductor Industry Association, more than 26 million workers—nearly one in every five workers in the U.S.—are employed in sectors that consume and use semiconductors. The increase in vehicle prices due to the shortage contributed to a full third of the elevated core inflation families faced last year. They have led to backlogs and shortages of everything from every day household appliances like vacuums to next-generation video game consoles.

From his first day in office, President Biden has focused on resolving near-term semiconductor bottlenecks, while putting the U.S. on the path to rebuilding domestic semiconductor production. The U.S. pioneered the semiconductor industry, and for decades held a leading market share and technological edge in semiconductor production. However, foreign manufacturers now produce semiconductors more sophisticated than those made by U.S. counterparts. Today, over 70 percent of semiconductor production occurs in Asia, including all production of the most advanced chips, and only 12 percent of global semiconductor production of any kind occurs in the United States, compared to 37 percent in 1990.

Since 2021, the semiconductor industry has announced nearly \$80 billion in U.S. investment. However, China alone has committed to provide \$150 billion in funding over the decade to increase its domestic production of semiconductors. Korea and Taiwan have invested heavily to cultivate their leading domestic semiconductor production ecosystems, and the EU, Japan, and India are preparing to do so as well.

The bipartisan, bicameral CHIPS for America Act included in the Bipartisan Infrastructure Act will provide more than \$50 billion in incentives to accelerate and catalyze domestic leading-edge semiconductor production. While the investments made by the private sector over the past year are necessary, these investments will not be sufficient to mitigate the risks associated with the current U.S. supply chain vulnerabilities. Passing the Bipartisan Innovation Act and fully funding CHIPS will build the necessary semiconductor supply chains here at home to ensure that families do not get hit with price hikes or shortages because of disruptions in factories thousands of miles away.

#### Chip Shortage an Economic Risk

The COVID-related semiconductor shortage has underscored the economy's vulnerability to bottlenecks in the sector. The supply-demand mismatch driving today's challenges is significant. Demand for semiconductors was as much as 17 percent higher in 2021 than it was in 2019, without a commensurate increase in supply, according to Department of Commerce analysis of the Risks in the Semiconductor Supply Chain request for information. The shortage shaved an estimated \$240 billion off U.S. GDP in 2021. The auto industry alone produced 7.7 million fewer cars in 2021 due to lack of chips. According to Deloitte, the chip shortage contributed to lost revenue of more than \$500 billion worldwide, \$210 billion in the auto industry in 2021 alone.

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However, impacts of the current shortage pale in comparison to the potential impact of losing access to the global semiconductor supply chain. In the Department of Commerce's E.O. 14017 industrial base review, DOC identified geographic concentration of semiconductor production as a key supply chain risk, stating, "Since semiconductors are such key components, the fragile supply chain for semiconductors puts virtually every sector of the economy at risk of disruption."

#### Chip Shortage a National Security Risk

Not only is U.S. economic growth and prosperity reliant on chips largely produced overseas, but a secure and reliable supply of semiconductors are critical to national security. Advanced semiconductors are integral to an array of critical national security capabilities, including sophisticated weapons systems such as the Javelin antitank missiles the U.S. is supply to Ukraine to defend itself against Putin's invasion.

In the Department of Defense's E.O. 14017 industrial base review, DOD noted "State-of-the-Art microelectronics are DOD's primary differentiator for asymmetric technology advantage over potential adversaries." DOD's unique microelectronics requirements are small in overall financial terms, representing only 1-2 percent of the total U.S. market. However, these needs drive many of the capabilities that are most critical to DOD's ability to defend the homeland. The United States must never be in a position where its national security interests are compromised or key capabilities are rendered inoperable due its inability to produce critical semiconductors.

#### Staying on the Leading Edge

Given how crucial semiconductors are to the U.S. economy and national security, particularly advanced semiconductors, the U.S., as well as our allies and partners, must take significant and immediate steps to resolve these supply chain vulnerabilities. First and foremost, Congress must fund the CHIPS Act in full to increase domestic production of semiconductors.

However, CHIPS is just one piece of the puzzle, as it is necessary but not sufficient condition for long-term U.S. technological leadership. To ensure the United States remains the global leader in the technologies that will shape our world – and our nation's economic and national security - over the coming decades, Congress must pass the Bipartisan Innovation Act. This will provide the United States with the resources, manufacturing base, and talent needed to compete globally, protect our national and economic security, and preserve our advantages in science and technology.

Semiconductor fabs take years to construct. There is no quick fix in the face of emergency. The best day to plant a tree is 20 years ago. The second best day is today. Semiconductor companies are planning large investments in response to surging demand for chips—and other countries are already stepping up with incentives to attract them. We must pass the Bipartisan Innovation Act including full funding for the CHIPS Act quickly to shore-up our domestic capabilities over the next several years.

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## **Readout of Congressional Briefing on National Security Impact of Semiconductor Supply Chain and Importance of Passing Bipartisan Innovation Act**

The White House, April 6, 2022

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This afternoon, senior Administration officials including Commerce Secretary Raymondo, Deputy Defense Secretary Hicks, National Security Advisor Sullivan, and National Science Foundation Director Panchanathan held a briefing with a bipartisan and bicameral group of Members of Congress to discuss the urgent need to invest in made-in-America semiconductors as well as research and development that will protect our economic and national security.

During the briefing, the Administration officials underscored how decades of disinvestment in domestic semiconductor manufacturing capacity have left America producing only 12% of global semiconductor output and vulnerable to the sort of supply chain disruptions we've seen in recent years, like the pandemic and Russia's war of aggression against Ukraine. A significant interruption to our supply of semiconductors could cause historic damage to the U.S. economy – damage far greater than the impact of chips shortages on the American auto industry right now – and would undercut our technological competitiveness and military advantages over adversaries globally.

The House and Senate have each passed bills to make historic investments in research, domestic manufacturing and America's capacity to make semiconductors – including with \$52 billion in new funding authorized in the CHIPS Act. This support would help spur further private sector investments in America's semiconductor industry after nearly \$80 billion in new investments in President Biden's first year in office, including Intel's \$20 billion fabrication facility in Ohio.

These investments in semiconductors are crucial and must be complemented by investment in other advanced technologies as well, including the research and development leading to the next generation of these technologies, and related workforce development. These investments are critical to making our economy stronger and more resilient, and to protect our national security. That's why the Administration officials urged Congress to move quickly to get legislation to the President's desk for his signature, including through action to formally go to conference and name conferees this week.

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## **Pelosi Announces Members of Conference Committee for America COMPETES Act**

April 7, 2022

Washington, D.C. – Speaker Nancy Pelosi announced the names of the Members of the House who will go to conference with the Senate over the House's America COMPETES Act of 2022, which makes crucial investments in the production of semiconductor chips, strengthening supply chains, and bolstering research and development.

“Today, we take another step toward sending to the President's desk a bipartisan, bicameral package to lower costs at home, make more goods in America and turbocharge our competitiveness in the world,” Speaker Nancy Pelosi said. “America has long led the world in innovation and technology. Thanks to the leadership of Chairwoman Eddie Bernice Johnson, the House strengthens our preeminence with our America COMPETES Act: a data-driven, results-oriented package to lift up American families, workers and businesses.”

“Under the leadership of our outstanding and experienced committee chairs and conferees, the House will champion key priorities with bipartisan support that will

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advance our families' financial security and our nations' economic security," Speaker Pelosi continued. "This includes investing \$52 billion to produce more semiconductor chips in America and \$45 billion to advance manufacturing at home – which together will help address supply chain disruptions that increase costs for Americans. We will also fight to reinvigorate American innovation through research and development, diversify our STEM workforce, and promote American interests and values abroad. Making the COMPETES Act law will deliver a key victory for our workers and families, while ensuring America can outcompete any nation – now and for decades to come." \*\*\*

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