1. Application of the Statutory Pricing Standard

a. Background

626. In the NPRM, we proposed that any pricing principles we adopt should be the same for interconnection and unbundled network elements because sections 251(c)(2) and (c)(3) and 252(d)(1) use the same pricing standard.[1492] We invited parties to comment on this issue and to justify any proposed distinction in the priority for interconnection and unbundled network elements. We also stated our belief that the same pricing rules that apply to interconnection and unbundled network elements should also apply to collocation under section 251(c)(6) of the 1996 Act.

b. Comments

627. Commenters generally agree that any pricing rules adopted by the Commission for interconnection and unbundled elements should be the same.[1493] These parties assert that any pricing rules the Commission ultimately adopts should not, therefore, create incentives to substitute or arbitrage one type of classification for another. Commenters also generally agree that the pricing rules the Commission adopts for interconnection and unbundled elements should also apply to collocation.[1494] Many of these parties agree that collocation is a subset of the interconnection arrangements contemplated by sections 251(c)(2) and 252(d)(1).[1495] On the other hand, a few parties contend that the pricing standards contained in section 252(d)(1) for interconnection and unbundled elements do not apply to collocation provided under section 251(c)(6).[1496] BellSouth argues that the Commission should not adopt any national standards for virtual collocation.[1497] Other commenters, including some that oppose the establishment of pricing rules by the Commission, argue that, to the extent that the Commission adopts national

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[1492] NPRM at para. 122.

[1493] *See, e.g.*, Citizens Utilities comments at 16 n.14; Ohio Commission comments at 42; Teleport comments at 46.

[1494] *E.g.*, ACSI comments at 16; ALTS comments at 34-35; Citizens Utilities comments at 16 n.14; Colorado Commission comments at 34; MCI comments at 54, 61; MFS comments at 30; NEXTLINK comments at 26; PacTel comments at 63; Sprint comments at 42; Teleport comments at 46.

[1495] *See, e.g.*, Citizens Utilities comments at 16 n.14; Colorado Commission comments at 34; MFS comments at 30; NEXTLINK comments at 26.

[1496] *See, e.g.*, SNET comments at 24 n.44.

[1497] BellSouth comments at 23.

standards for collocation, they should generally follow those established in the Commission's *Expanded Interconnection* proceeding in CC Docket No. 91-141.[1498]

c. Discussion

628. Sections 251(c)(2) and (c)(3) impose an identical duty on incumbent LECs to provide interconnection and access to network elements "on rates, terms, and conditions that are just, reasonable, and nondiscriminatory."[1499] In addition, both interconnection and unbundled network elements are made subject to the same pricing standard in section 252(d)(1). Based on the plain language of sections 251(c)(2), (c)(3), and section 252(d)(1), we conclude that Congress intended to apply the same pricing rules to interconnection and unbundled network elements. The pricing rules we adopt shall, therefore, apply to both.

629. We further conclude that, because section 251(c)(6) requires that incumbent LECs provide physical collocation on "rates, terms, and conditions that are just, reasonable, and nondiscriminatory," which is identical to the standard for interconnection and unbundled elements in sections 251(c)(2) and (c)(3), collocation should be subject to the same pricing rules.[1500] We also note that, because collocation is a method of obtaining interconnection and access to unbundled network elements, collocation is properly treated under the same pricing rules. This legal conclusion that there should be a single set of pricing rules for interconnection, unbundled network elements, and collocation provides greater consistency and guidance to the industry, regulators, and the courts. Moreover, it reduces the regulatory burdens on state commissions of developing and applying different pricing rules for collocation, interconnection, and unbundled network elements. We note that our adoption of this single set of pricing rules should minimize regulatory burdens, conflicts, and uncertainties associated with multiple, and possibly inconsistent rules, thus facilitating competition on a reasonable and efficient basis minimizing the economic impact of our rules for all parties, including small entities and small incumbent LECs.[1501]

[1498] *See, e.g.*, Bell Atlantic comments at 32-34.

[1499] 47 U.S.C. § 251(c)(2), (c)(3).

[1500] *See supra,* Section VI.B.

[1501] *See* Regulatory Flexibility Act, 5 U.S.C. §§ 601 *et seq.*

2. Rate Levels

a. Pricing Based on Economic Cost

(1) Background

630. We observed in the NPRM that economists generally agree that prices based on forward-looking long-run incremental costs (LRIC) give appropriate signals to producers and consumers and ensure efficient entry and utilization of the telecommunications infrastructure.[1502] We noted, however, that there was a lack of general agreement on the specifics of methodology for deriving prices based on LRIC or total service long-run incremental cost (TSLRIC). We invited parties to comment on whether we should require the states to employ a LRIC-based pricing methodology and to explain with specificity the costing methodology they support.[1503] We recognized, however, that prices based on LRIC might not permit recovery of forward-looking costs if there were significant forward-looking joint and common costs among network elements.[1504] We sought comment on how, if rates are set above incremental cost, to deal with the problems inherent in allocating common costs and any other overheads.[1505] We observed that, by defining the unbundled elements at a sufficiently aggregated level, it may be possible to reduce the costs to be allocated as joint and common by identifying a substantial portion of costs as incremental to a particular element. To the extent that joint and common costs cannot be entirely eliminated, we sought comment on various methodologies for assigning them, including the use of a fixed allocator or on the basis of inverse demand elasticity. We also sought comment on whether, regardless of the method of allocating common costs, we should limit rates to levels that do not exceed stand-alone costs.[1506] Finally, we invited parties to comment on whether a LRIC-based methodology would establish a price for interconnection and unbundled network elements that includes a reasonable profit and thus complies with section 252(d)(1).[1507]

[1502] NPRM at para. 124.

[1503] *Id.* at para. 126.

[1504] *Id.* at para. 129.

[1505] *Id.* at para. 130.

[1506] *Id.* For a definition of stand-alone costs, *see* Section VII.B.2.a. *infra.*

[1507] 47 U.S.C. § 252(d)(1)(A)(i); NPRM at para. 129.

631. A number of states already employ, or have plans to utilize, some form of LRIC or TSLRIC methodology in their approach to setting prices for unbundled network elements,[1508] with several states choosing LRIC or TSLRIC as a price floor.[1509] For instance, the Connecticut Commission adopted a TSLRIC methodology to measure the cost of service of SNET, its principal incumbent LEC.[1510] Arizona also requires incumbent LECs to conduct TSLRIC cost studies to establish the underlying cost of unbundled services and facilities.[1511] The Ohio Commission has adopted Long Run Service Incremental Cost ("LRSIC"), which is closely related to TSLRIC.[1512] The Missouri and Wyoming Commissions are among a number of state commissions that have not yet adopted a pricing methodology, but are considering LRIC or TSLRIC.[1513] Oklahoma law provides for submission of LRIC cost studies and studies identifying a contribution to common costs for interconnection of facilities and access to network elements to the Oklahoma Commission during an arbitration.[1514] A number of states have yet to choose a pricing methodology. For instance, the New York Commission

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[1508] *See, e.g.*, California Commission comments at 29 (California has adopted TSLRIC as the standard for developing the costs of unbundled elements and in a rulemaking this summer will determine the unbundled network elements and what level of shared and common costs should be included in the price of each); Michigan Commission comments at 13 (1996 prices for loops to remain at levels established by the Michigan Commission in its original interconnection order or at TSLRIC); Texas Commission comments at 22 (Texas Commission has employed LRIC-based pricing methodologies for many years; SWBT and GTE required to file LRIC cost studies to be used in pricing not later than November 1, 1996).

[1509] *See, e.g.*, Colorado Commission comments at Attachment (Rules Prescribing Principles for Costing and Pricing of Regulated Services of Telecommunications Service Providers) 4 CCR 723-30, Rules 4-5; Hawaii Administrative Rules, Sections 6-80-32-34 (setting out a three-tiered pricing regime with TSLRIC set as floor for pricing of competitive services); Louisiana Commission comments at Attachment (Louisiana Public Service Commission "Regulations for Competition in the Local Telecommunications Market"), p.30; Washington Commission comments at 25, Appendix B (*Washington Utilities and Transportation Commission v. U S West Communications*, Docket No. UT-950200 at 82 (Washington Commission, April 11, 1996)); Wisconsin Stat. Ann. section 196.204 (requiring the price of each network service or function to exceed TSLRIC).

[1510] Connecticut Commission comments at 4.

[1511] Arizona Commission comments, Exhibit V (Arizona Administrative Code R14-2-1101 *et seq.*), p.10.

[1512] *See* Ohio Commission comments at 43-45.

[1513] *See, e.g.*, Missouri Commission comments at 11 (supports LRIC for costing; LRIC is defined in pending state legislation); Wyoming Commission comments at 26-27 (draft rules propose use of TSLRIC as a price floor, with prices to include a contribution to shared, common, and joint costs, and the sum of prices for unbundled elements not to exceed retail for bundled services; incumbent LECs shall impute the prices of unbundled elements into the price floors of each of their own services that utilize the network elements).

[1514] Oklahoma Commission comments at Appendix A (Corporation Commission Telephone Rules OAC 165:55-17-25), pp.10-11.

sets prices on a case-by-case basis.[1515] Unbundled element prices also exist in several states pursuant to negotiated interconnection agreements that have either already been approved by state commissions or are under consideration.[1516]

632. Section 252(d)(1) requires, *inter alia*, that rates for interconnection and unbundled network elements be based on "cost (determined without reference to a rate-of-return or other rate-based proceeding)."[1517] We tentatively concluded in the NPRM that this language precludes states from setting rates by use of traditional cost-of service regulation, with its detailed examination of historical carrier investment and expenses.[1518] Instead, we indicated our belief that the statute contemplates the use of other forms of cost-based price regulation, such as the setting of prices based on forward-looking economic cost methodologies (such as LRIC) that do not involve the use of an embedded rate base. We sought comment on whether section 252(d)(1) forecloses consideration of historical or embedded costs or merely prohibits state commissions from conducting a traditional rate-of-return proceeding to establish prices for interconnection and unbundled network elements. Embedded costs are the costs that the incumbent LECs carry on their accounting books that reflect historical purchase prices, regulatory depreciation rates, system configurations, and operating procedures. We invited parties to comment on whether incumbent LECs should be permitted to recover some portion of their historical or embedded costs over TSLRIC.[1519]

633. In the NPRM, we noted that certain incumbent LECs had advocated that interconnection and access to unbundled element prices be based on the "efficient component

[1515] *Competition, The State Experience* at 80 (compilation of written responses by state commission staffs to questions by FCC staff, compiled by NARUC) (March 8, 1996).

[1516] According to information in our possession, such agreements have been negotiated in, among other states, Alabama, Florida, Georgia, Kentucky, Illinois, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. Letter from W.W. Jordan, Executive Director -- Federal Regulatory, BellSouth, to William F. Caton, Acting Secretary, July 11, 1996 at Attachment (containing chart detailing agreements between BellSouth and new entrants in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee); "Interconnection Agreement Under Sections 251 and 252 of the telecommunications Act of 1996, by and between, Ameritech Information Industry Services and MFS Intelenet of Illinois, Inc.," dated May 17, 1996 (filed July 25, 1996).

[1517] 47 U.S.C. § 252(d)(1)(B).

[1518] NPRM at para. 123.

[1519] *Id.* at para. 129.

pricing rule" (ECPR).[1520] Under this approach, an incumbent LEC that sells an essential input element, such as interconnection, to a competing network would set the price of that input element equal to "the input's direct per-unit incremental costs plus the opportunity cost to the input supplier of the sale of a unit of input."[1521] We tentatively concluded in the NPRM that ECPR or equivalent methodologies are inconsistent with the section 252(d)(1) requirement that rates be based on "cost," and we proposed to preclude the states from using this methodology.[1522]

634. Section 254 requires the Commission and the Joint Board established thereunder to ensure that "[a]ll providers of telecommunications service . . . make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service . . . ." That section further provides that "[t]here should be specific, predictable, and sufficient Federal and State mechanisms to preserve and advance universal service."[1523] The Conference Committee also explained that these provisions require any such universal service support payment to be, to the extent possible, "explicit, rather than implicit as many support mechanisms are today."[1524] In the NPRM, we sought comment on whether "it would be consistent with sections 251(d)(1) and 254 for states to include any universal service costs or subsidies in the rates they set for interconnection, collocation, and unbundled network elements."[1525] In particular, we discussed the "play or pay" system adopted by the state of New York in which interconnectors that agree to serve all customers in their self-defined service areas ("players") potentially pay a substantially lower interconnection rate than those that serve only selected customers ("payers") and are, therefore, liable to pay additional contribution charges.[1526] We noted that the statutory schedule for the completion of the universal service reform proceeding (15 months from the enactment of the 1996 Act) is different from that for this proceeding (6 months from the date of enactment of the 1996 Act).

[1520] *Id.* at para. 147. *See* William J. Baumol, *Some Subtle Issues in Railroad Deregulation*, 10 Int'l J. Trans. Econ. 341 (1983); William Baumol & Gregory Sidak, *Toward Competition in Local Telephony* (1994); William Baumol & Gregory Sidak, *The Pricing of Inputs Sold to Competitors*, 11 Yale J. on Reg. 171 (1994).

[1521] William Baumol & Gregory Sidak, *The Price of Inputs Sold to Competitors*, 11 Yale J. on Reg. 171, 178.

[1522] NPRM at para. 148.

[1523] 47 U.S.C. § 254(b)(4) and (b)(5).

[1524] Joint Explanatory Statement at 130-31. "In keeping with the conferees' intent that universal service support should be clearly identified, [section 254(e)] states that such support should be made explicit." *Id.* at 131; *see also* 47 U.S.C. § 254(e).

[1525] NPRM at para. 145.

[1526] *Id.*

We asked whether the ability of states to take universal service support into account differs pending completion of the section 254 Joint Board proceeding or state universal service proceedings, pursuant to section 254(f), during any transition period that may be established in the section 254 proceeding or thereafter.[1527]

(2) Comments

635. *Forward-Looking Costs.* Most new entrants and IXCs agree that prices for interconnection and unbundled elements should be based on forward-looking, economic costs.[1528] Many state commissions also argue that, if federal pricing rules are adopted, forward-looking methodologies should serve as the basis for establishing rates in a competitive environment.[1529] The Department of Justice contends that pricing above forward-looking economic costs would subject competitors to substantial risk of a price squeeze because the real cost of a network element for the incumbent LEC will be its forward-looking economic cost, while the cost to the new entrant will be the higher price charged for the element by the LEC.[1530] Parties favoring a forward-looking, incremental cost methodology argue that it is the appropriate pricing standard for several reasons. First, such an approach simulates the prices for network elements that would result if there were a competitive market for the provision of such elements to other carriers.[1531] In such a market, these parties argue, competition would drive prices to forward-looking costs, even if such costs were lower than a firm's historical costs.[1532] Second, unbundled element prices based on forward-looking economic costs prevent incumbent LECs from exploiting their market power at the expense of their competitors that are dependent on the incumbent LEC's facilities.[1533] Third, a forward-looking incremental cost methodology creates the right investment incentives for competitive

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[1527] *Id.*

[1528] *See, e.g.*, ACSI comments at 54-55; AT&T comments at 47; Jones Intercable comments at 25-26; LDDS comments at 60; MCI comments at 59, 61; NEXTLINK comments at 27; Sprint comments at 43-44; Teleport comments at 46; Telecommunications Resellers Ass'n comments 38-39; *see also* Ad Hoc Telecommunications Users Committee comments at 31-34; DoJ comments at 27-32; Frontier comments at 21-22; Texas Public Utility Counsel comments at 33-34; Attorneys General reply at 3; NCTA reply at 18-20; NTIA reply at 17-18 n.35.

[1529] *See, e.g.*, New York Commission comments at 3-4; Missouri Commission comments at 11; Kentucky Commission comments at 4-5; Wyoming Commission comments at 27-28; Ohio Commission comments at 41-43.

[1530] DoJ comments at 28-31.

[1531] *See, e.g.*, DoJ comments at 28-29.

[1532] *See, e.g.*, AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), p.5; DoJ comments at 28-29.

[1533] *See, e.g.*, DoJ comments at 30.

facilities-based entry and creates incentives for the market to move towards competition while preserving opportunities for competition even if some network elements prove to be resistant to competition.[1534] Fourth, a pricing methodology based on forward-looking economic costs minimizes the incumbent LECs' opportunities to engage in anticompetitive cross-subsidization that could delay the emergence of effective competition.[1535] Finally, these parties argue that pricing based on forward-looking economic costs will lead to lower prices for consumers.[1536]

636. While many commenters agree that the proper economic cost standard for interconnection and unbundled elements is one based on forward-looking LRIC, the record indicates a lack of consensus on the precise definition of such a methodology. While many parties, including some incumbent LECs, favor a pricing methodology based on TSLRIC,[1537] others contend that LRIC provides the appropriate basis for pricing interconnection and unbundled elements.[1538] AT&T argues that, because incumbent LECs will be providing access to unbundled network elements and interconnection, and not merely the individual services that use those elements, the relevant question is the incumbent LEC's cost of producing the entire demand for network elements.[1539] Because TSLRIC defines a cost increment relative to a hypothetical situation in which the supplier does not currently provide the network element at all and thus must construct and operate all element-specific facilities necessary to produce

[1534] *See, e.g.*, AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), p.7; DoJ comments at 29; NCTA comments at Appendix B (Unbundling, Interconnection, and Traffic Exchange: The Pricing of Access to Local Exchange Networks), p. 22.

[1535] *See, e.g.*, DoJ comments at 30-31.

[1536] *See, e.g.*, DoJ comments at 28-31.

[1537] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 34-36; AT&T comments at 47-48; ALTS comments at 35-36; Ameritech comments at 63-64 (but must include recovery of joint, common, and residual costs); CFA/CU comments at 26-32 (including a contribution to joint and common costs); Citizens Utilities comments at 18; Comcast comments at 23; CompTel comments at 67-71; Competition Policy Institute comments at 8; DoJ comments at 28-31 (including any joint and common costs); Frontier comments at 21-22; Intermedia comments at 14; LDDS comments at 56, 62; MCI comments at 60-61; NCTA comments at 49-50; Ohio Consumers' Counsel comments at 24-25 (including a markup over TSLRIC to reflect a reasonable allocation of joint and common costs); SNET reply at 5-7 (including a reasonable contribution to common costs); Sprint comments at 44 (plus a reasonable contribution to joint and common costs), reply at 28-32; TCC comments at 14.

[1538] *See, e.g.*, Texas Statewide Tel. Cooperative comments at 8-11, 14.

[1539] AT&T comments at 47, Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.6.

the network element, AT&T believes that TSLRIC, unlike LRIC, includes all element-specific fixed costs.[1540]

637. The Consumer Federation of America argues that costs must be analyzed consistently across all major services using the same cost methodology, *i.e.*, individual functionalities or specific capacities must have similar costs across services.[1541] AT&T argues that TSLRIC should exclude all costs attributable to the incumbent LECs' retailing operations, and that all other cost allocations should be competitively-neutral and assigned on an equally proportional basis relative to attributable costs.[1542] ALTS argues that the underlying data from a TSLRIC study should be accessible for purposes of replicating the study methods and comparisons to other public data.[1543] NTIA contends that the Commission should require the states to consider recovery of only those costs that the incumbent can convincingly demonstrate are incurred in service provisioning.[1544] Supporters of a forward-looking economic cost methodology argue that TSLRIC studies can be prepared quickly to establish interconnection and unbundled element prices.[1545]

638. Incumbent LECs generally oppose the adoption of a forward-looking, long-run incremental costing methodology.[1546] At least five major reasons are offered in opposition. First, opponents of a forward-looking, long-run incremental costing methodology argue that setting the price of each discrete service based on LRIC will not recover the total costs of the network because if prices are set equal to the cost of the last unit, total revenues will fall short of total costs.[1547] Second, PacTel argues that a forward-looking cost methodology also suffers from the "fallacy of perfect competition" because it does not account for the fact that, while it is true that competition drives the price of every product toward incremental cost, every multi-product firm must have some products priced far enough above incremental cost

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[1540] *Id.* at 48.

[1541] CFA/CU comments at 32.

[1542] AT&T comments at 61-62, 64-65.

[1543] ALTS comments at 36-37.

[1544] NTIA reply at 28.

[1545] *See, e.g.*, LDDS comments at 64-65.

[1546] *See, e.g.*, Matanuska comments at 3-4; NYNEX comments at 46-47; PacTel comments at 66-67; TCA comments at 8.

[1547] *See, e.g.*, Bell Atlantic comments at Attachment 1 (Affidavit of Jerry A. Hausman), pp.3-4; NECA comments at 8; Rural Tel. Coalition comments at 25.

to recover its total costs and return a profit to investors.[1548] Third, incumbent LECs argue that setting prices based on the forward-looking economic cost of the element will not create incentives for new entrants to build their own facilities,[1549] and will discourage efficient entry and useful investment by both incumbent LECs and their competitors.[1550] Fourth, some opponents of a forward-looking, economic cost methodology contend that such an approach raises significant practical and administrative problems because LRIC studies are expensive to conduct, almost impossible to audit or review particularly for small entities seeking to enter the local exchange market, highly subjective, and the necessary data are under the exclusive control of the party subject to the agreement.[1551] USTA and other commenters also argue that use of LRIC cost studies would fail to capture differences in geographic regions, thereby denying small incumbent LECs a reasonable opportunity to recover their costs.[1552] Finally, many opponents of a forward-looking, economic cost approach to pricing interconnection and access to unbundled elements argue also that such a methodology precludes any contribution to joint and common costs and does not allow the recovery of historical costs.[1553] These parties contend that network providers must be permitted to recover their total costs of service, including a return on investment and a reasonable allocation of joint, common, and historical costs.[1554]

639. Incumbent LECs generally contend that costs should be based on the individual incumbent LEC's existing network design and technology instead of the idealized least-cost,

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[1548] PacTel comments at 68-69; *see also* Rural Tel. Coalition reply at 26-27.

[1549] *See, e.g.*, Bell Atlantic comments at 38; SBC comments at 91-92.

[1550] *See, e.g.*, PacTel comments at 70; SBC comments at 90-92; *see also* U S West comments at Exhibit A (Federal Implementation of the Telecommunications Act of 1996: Competition in the Local Exchange), p.9.

[1551] *See, e.g.*, Bell Atlantic comments at Attachment 2 (Declaration of Robert W. Crandall), p.8; MFS comments at 54, reply at 11-12; NECA comments at 8.

[1552] *E.g.*, USTA comments at 45-50; Bay Springs reply at 8.

[1553] *See, e.g.*, BellSouth comments at 56-57; NYNEX comments at 50-52; PacTel comments at 65-66; SBC comments at 88, reply at 24-25; U S West reply at 9, 12 (stating that depreciation expenses should be properly allocated); *see also* NECA comments at 8; TCA comments at 8-9. For a discussion of recovery of joint, common, and embedded costs, *see infra* Section VII.B.2.a.

[1554] *See, e.g.*, Ameritech comments at 60, reply at 30-33 (stating that residual cost recovery must also be permitted); Bell Atlantic comments at 35-36 (stating that the recovery of the total costs of constructing and operating the networks must also be permitted); NYNEX comments at 42-44; USTA comments at Attachment 1 (Affidavit of Jerry A. Hausman), pp.5-6.

most efficient network design and technology.[1555] USTA argues that, if competitors want to use an incumbent LEC's embedded plant, competitors should pay for the existing plant, not some theoretical, more efficient plant.[1556] In addition, these parties argue that, if a new entrant can purchase the unbundled element from the incumbent LEC at a price no higher than the cost of the least-cost, most efficient provider, then the new entrant has little incentive to invest in its own facilities. Ameritech also contends that section 252(d)(1) addresses recovery of the incumbent LEC's costs of providing interconnection and unbundled network elements, not the costs of a hypothetical carrier.[1557]

640. On the other hand, several new entrants argue that a forward-looking economic cost methodology should be based on an efficient provider's costs of producing a service.[1558] These parties contend that, in a competitive market, prices are determined by the cost of efficient potential entrants, not the embedded costs of existing firms.[1559] In addition, a pricing standard based on the costs of the element using the most-efficient technology prevents incumbent LECs from charging competitors for the cost of facilities that would in fact be used in large part by the incumbent LECs themselves to compete in new markets such as interexchange service.[1560] Sprint, however, argues that prices should be based on the incumbent LEC's average utilization and existing network design and technology, not on an idealized network and technology that may bear no relationship to the incumbent LECs existing operations.[1561]

641. USTA, Bell Atlantic, and BellSouth have asserted in various filings and *ex parte* presentations that TSLRIC-based pricing would not properly compensate incumbent LECs for

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[1555] *See, e.g.*, Ameritech reply at 32-33; Bell Atlantic reply at 17-18; Bellsouth reply at 36-37; *see also* GVNW comments at 36; USTA comments at 40, reply at 21-22.

[1556] USTA comments at 40.

[1557] Ameritech reply at 32.

[1558] *See, e.g.*, ACSI comments at 56; AT&T comments at 57-60 (optimally configured and sized assets with current technology and efficient operating practices); AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), p. 10 (efficient, cost-minimizing competitor); GST comments at 26-27 (costs of an efficient LEC rather than the actual costs of an incumbent LEC); Teleport reply at 30 (best available technology at today's prices); *see also* DoJ reply at 9-11 (best generally available technology); Louisiana Commission comments at 4, 15; Telecommunications Resellers Ass'n comments at 38 (most efficient available technology).

[1559] *See, e.g.*, TCC comments at 17.

[1560] DoJ reply at 10.

[1561] Sprint reply at 31-32.

certain factors that affect capital costs and economic depreciation rates.[1562] First, when technological progress lowers equipment costs, the replacement or forward-looking economic cost of certain durable sunk investments can be expected to decline over time. In this case the correct measure of cost over any period of time should include the expected decline in economic value during that period.[1563]

642. Second, these parties argue that, when investments in facilities needed to meet a specific level of demand are sunk and irreversible, an incumbent LEC may not be able to recover these costs over the physical life of the facility, because demand may decrease as new entrants elect to build their own facilities. When entry is possible using current technology, either competition from these entrants, or rate regulation can prevent retail service prices from rising significantly, which will place an effective ceiling on profits. If demand for a service falls in a market in which the incumbent LEC is the only supplier and owner of sunk facilities, however, there will be no corresponding exit of other carriers that will prevent prices and profits from falling. Because of this asymmetric effect of changing market conditions on an incumbent LEC's profits, these parties claim that increasing the uncertainty due to entry in the local exchange market will increase the cost of capital to the incumbent LEC. They then assert that the inability of TSLRIC to account for the risks associated with sunk facilities can lead to understating the true economic cost of an element by a factor of three.[1564] Finally they assert that empirical research that shows firms' hurdle rates in excess of the market cost of capital shows that the considerations of risk associated with sunk investment significantly raises a firm's cost of capital.[1565]

643. *Joint and Common Costs.* Several incumbent LECs contend that a forward-looking, economic cost methodology does not take into account either joint or common costs.[1566] Although a few parties contend that incumbent LECs do not need a mark-up over

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[1562] USTA reply comments at Attachment 1 (Reply Affidavit of Jerry A. Hausman); Bell Atlantic comments at Attachment 1 (Affidavit of Jerry A. Hausman); Letter from Robert T. Blau, Vice President, Executive and Federal Regulatory Affairs, BellSouth, to William F. Caton, Acting Secretary, FCC, July 25, 1996, at Attachment (Response to Hubbard and Lehr).

[1563] We note that USTA seems to present a contradictory argument regarding the expected effect of this issue -- here Hausman claims that prices will decrease rapidly, whereas in our price cap proceeding, USTA sponsored testimony by Christenson that claimed input prices would generally increase at the rate of inflation. USTA comments in CC Docket No. 94-1, at 25-27.

[1564] *See* USTA reply at Attachment 1 (Reply Affidavit of Jerry A. Hausman), p.1.

[1565] *Id.* at 7.

[1566] *See, e.g.*, Bell Atlantic comments at Tab 2 (Declaration of Robert W. Crandall), p.9, reply at Attachment 1 (Declaration of Alfred E. Kahn and Timothy J. Tardiff), p.6; BellSouth comments at 51; Municipal Utilities comments at 19-21; SBC reply at 24-25; TDS comments at 18-19.

TSLRIC to recover joint and common costs because incumbents are presumably already recovering these costs,[1567] commenters generally agree that incumbent LECs should be permitted to recover some measure of forward-looking joint and common costs.[1568] These commenters argue that pricing at incremental cost without joint and common costs is economically inefficient because it permits competitors to offer the incumbent LECs' services without making a contribution to the common costs that the LECs incur in offering the service.[1569] They further contend that excluding recovery of joint and common costs will distort technological decisions because the LEC is encouraged to invest in less efficient technologies that have higher incremental costs and lower common costs, which would tend to destroy economies of scope.[1570] Finally, incumbent LECs fear that they will be forced to increase retail rates to recover these unrecovered common costs, while their competitors that do not face such costs will reduce their own prices and have little incentive to invest in facilities of their own.[1571]

644. There is no consensus in the record on the magnitude of the joint and common costs at stake. Although commenters argued that the amount of common costs varies dramatically due to differences in location, network construction, and equipment,[1572] several parties are skeptical that there are significant joint and common costs between network elements given the relative modularity of the network and associated functions.[1573] These parties contend that, if joint and common costs are incurred, incumbent LECs must quantify them so that a state commission can determine whether and precisely how much contribution

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[1567] *See* Telecommunications Resellers Ass'n comments at 39-40; Texas Public Utility Counsel comments at 19-20; WinStar comments at 29, reply at 9-10.

[1568] *See, e.g.*, Ameritech comments at 60; Bell Atlantic comments at 36; Citizens Utilities comments at 19; Cincinnati Bell comments at 24-25; Colorado Commission comments 45-46; DoJ reply at 6; GTE Comments at 61-62; Kentucky Commission comments at 5; Lincoln Tel. comments at 13; Mass. Commission comments at 11-12; NCTA comments at 49-50; Ohio Consumers' Counsel comments at 24; SBC comments at 91; Sprint comments at 43-44; AT&T reply at 28; NTIA reply at 19-21; USTA reply at 19.

[1569] *E.g.*, BellSouth comments at 52-53; GTE comments at Attachment 3 (Affidavit of Edward C. Beauvais, Ph.D.), p.3.

[1570] *See, e.g.*, BellSouth comments at 53; Lincoln Tel. comments at 13.

[1571] *E.g.*, BellSouth comments at 53-54.

[1572] *See, e.g.*, Municipal Utilities comments at 19-20; NARUC reply at 9.

[1573] *See, e.g.*, AT&T comments at Attachment or Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.13-14; Competition Policy Institute comments at 19; DJ comments at 31-32, reply at 8; Texas Public Utility Counsel comments at 24-25.

is needed.[1574] The Department of Justice asserts that, when developing a TSLRIC for unbundled network elements, it is preferable, where possible, to focus on costs of facilities and network elements rather than services that use those facilities in order to arrive at a more accurate determination of economic costs and to reduce the amount of costs that must be treated as joint or common.[1575] The incumbent LECs disagree with the new entrants' characterization of these costs as *de minimis* and argue that there is no evidence that unrecovered joint and common costs are much lower in the TSLRIC rates for physical elements than a TSLRIC standard based on the cost of providing services.[1576]

645. There is considerable disagreement in the record over the appropriate method of allocating joint and common costs under a TSLRIC approach. AT&T contends that the vast majority of the relevant costs will be causally attributed to particular network elements in the calculation of TSLRIC, and that we should prescribe rigid allocators that limit the incumbents' ability to manipulate prices by imposing high markups on new entrants.[1577] This approach, it is argued, is more competitively neutral than Ramsey pricing, which allocates costs based on inverse demand elasticity.[1578] In contrast, incumbent LECs advocate allocation of joint and common costs based on inverse demand elasticity,[1579] *i.e.*, according to Ramsey pricing principles.[1580] New entrants and other parties oppose the use of Ramsey pricing for interconnection and unbundled network elements for use in a market that is moving toward competition over the long-run.[1581] They contend that Ramsey pricing enables LECs to shift costs associated with entry into new competitive markets over to captive services.[1582] One

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[1574] Texas Public Utility Counsel comments at 17-28; Sprint comments at 47-50.

[1575] DoJ reply at 8; *see also* Competition Policy Institute comments at 19.

[1576] *E.g.*, PacTel reply at 27; *see also* Cincinnati Bell reply at 10.

[1577] *See* AT&T comments at 61-62.

[1578] *See, e.g.*, Teleport comments at 47-48.

[1579] *See e.g.*, GTE comments at 63, comments at Attachment 3 (Affidavit of Edward C. Beauvais, Ph.D.), pp.4-6; *see also* Mass. Commission comments at 11-12.

[1580] *See* Frank P. Ramsey, *A Contribution to the Theory of Taxation*, 37 Econ. J. 47 (1927); *see generally* Kenneth E. Train, *Optimal Regulation: The Economic Theory of Natural Monopoly* 115-40 (1992) (discussing efficiency properties of Ramsey prices); Bridger M. Mitchell & Ingo Vogelsang, *Telecommunications Pricing: Theory and Practice* 43-61 (1991).

[1581] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 39-41; CompTel comments at 79-80; MECA comments at 45; Teleport comments at 47-48; Texas Public Utility Counsel comments at 27; WinStar reply at 10-11.

[1582] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 38-39.

state commission responds that the Commission's concern in this regard would be addressed by calculating demand elasticities on the basis of the total industry demand for the service, which would negate the influence of competition on demand elasticities.[1583]

646. Commenters suggested other means of allocating joint and common costs. For example, certain incumbent LECs argue that these costs must not be shifted from interconnection and unbundled elements to residential subscribers,[1584] while certain new entrants suggest that these costs should be recovered at the retail level.[1585] Many new entrants agree that the Commission should require allocation of joint and common costs that minimizes the opportunity for incumbent LECs to harm competitors through strategic pricing.[1586] For example, some new entrants argue that states should be required to minimize allocation of joint and common costs to bottleneck or essential network elements.[1587] MCI and Sprint assert that such costs should be spread across all services provided by a carrier in proportion to the TSLRIC for each service.[1588] A few commenters assert that the Commission should adopt a fixed mark-up over TSLRIC for allocation of joint and common costs.[1589] Cable & Wireless supports the adoption of a rule that allocates common costs uniformly for all services offered. It argues that a disproportionate allocation system, that for example, assigns common costs strictly to retail services purchased for resale by small companies, but not to unbundled network elements utilized by larger competitors, would prove detrimental to the development of local competition.[1590] Finally, certain parties suggested that regardless of the method

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[1583] *See, e.g.*, Mass. Commission comments at 12.

[1584] *See, e.g.*, Puerto Rico Tel. comments at 10; Rural Tel. Coalition comments at 27.

[1585] *E.g.*, MCI reply at 9-10.

[1586] *See, e.g.*, MCI reply at 9-10.

[1587] *See, e.g.*, LCI comments at 4-5 (even under a TSLRIC methodology, it may be necessary to allocate joint direct costs among classes of service); Time Warner comments at 52-53 (only elements that can be duplicated by competitors or that are already available from other sources should include a reasonable markup over TSLRIC for shared and common costs); *see also* CFA/CU comments at 33-35 (allocation to such elements should be no more than the allocation of such costs to basic service).

[1588] *See* AT&T comments at 64; MCI reply at 9-10; Sprint comments at 47.

[1589] *See, e.g.*, Competition Policy Institute comments at 19 (suggesting an overhead loading of six percent); *see also* Sprint comments at 48-49 (joint and common costs should be no more than 15 percent of TSLRIC).

[1590] Cable & Wireless comments at 35.

ultimately used to allocate joint and common costs, TSLRIC should serve as the floor[1591] and prices should not exceed stand-alone costs.[1592]

647. *Reasonable Profit.* Commenters disagree over what should constitute a "reasonable profit." Numerous commenters argue that a TSLRIC-based methodology for the pricing of interconnection and unbundled network elements includes a reasonable profit and is, therefore, consistent with the 1996 Act.[1593] These commenters argue that economic measures, such as TSLRIC, reflect a reasonable profit by including the cost of capital.[1594] Time Warner and NEXTLINK contend that permitting incumbent LECs to receive a profit above that contained within TSLRIC pricing would provide them with a greater return on facilities than was permitted under rate-of-return regulation by "double-counting" the profit.[1595] Furthermore, NEXTLINK rejects the notion that profit includes the recovery of embedded costs or is a means of recovering subsidies for universal service currently recovered through access charges such as the transport interconnection charge or carrier common line charge, or their intrastate equivalents.[1596] Similarly, LDDS believes that "reasonable profit" cannot be read to include contribution to costs having nothing to do with providing the network elements or interconnection that are the subject of a section 252 pricing standard.[1597]

648. Incumbent LECs, however, contend that setting rates on a TSLRIC-based methodology alone would violate section 252(d)(1) by precluding recovery of a reasonable profit.[1598] NYNEX and USTA state that profit is what a firm makes after it recovers its total

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[1591] *See, e.g.*, Citizens Utilities comments at 19; Florida Commission comments at 26; SBC comments at 93-94.

[1592] *See, e.g.*, AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.14-15; TDS comments at 21.

[1593] *See, e.g.*, CompTel comments at 69-70; LDDS comments at 61; MCI comments at 61-62; Texas Public Utility Counsel comments at 19-20; WinStar comments at 29; Ad Hoc Telecommunications Users' Committee reply at Appendix A (Interconnection Pricing Standards for Monopoly Rate Elements in a Potentially Competitive Local Telecommunications Market), p.12.

[1594] *E.g.*, AT&T reply at 31; CompTel comments at 69-70, reply at 39; DoJ reply at 9; Frontier reply at 12-15; MCI comments at 61-62; Texas Public Utility Counsel comments at 19-20; WinStar comments at 29.

[1595] NEXTLINK comments at 28; Time Warner reply at 31-32.

[1596] NEXTLINK comments at 28-29.

[1597] LDDS comments at 61.

[1598] *See, e.g.*, GTE comments at 60; NYNEX comments at 51-52; PacTel comments at 69; SBC comments at 88; TCA comments at 9; TDS comments at 18; *see also* GTE comments at Attachment 3 (Affidavit of Edward C. Beauvais, Ph.D.), p.9.

costs of providing all of its services, including its investment-related costs.[1599] Ameritech similarly contends that the term "reasonable profit" means the ability to earn positive economic profits as an incentive for efficiency and innovation.[1600] PacTel argues that, in order to allow for a reasonable profit, rates for interconnection and unbundled elements must permit full recovery of historical accounting costs. PacTel charges that the federal courts have held that the determination of a "reasonable profit" should consider the effect on the carrier's whole enterprise and, therefore, the sum of the carrier's rates must enable it to recover its total historical costs.[1601]

649. Several parties contend that the issue of what constitutes a reasonable profit should be left to the states. Citizens Utilities contends that the issue of whether profit is reasonable is a question of fact to be resolved, where necessary, in arbitration proceedings.[1602] Time Warner argues that what constitutes reasonable profit should, as a matter of policy, vary depending on the nature of the facilities or services being provided and should, therefore, be left to the states.[1603] The Illinois Commission argues that states may even use rate-of-return methodologies for the determination of reasonable profit.[1604]

650. There is also disagreement among the commenters regarding the force of the reasonable profit language in section 252. While many incumbent LECs interpret Section 252(d)(1) as *requiring* prices to include a reasonable profit,[1605] certain new entrants and other parties argue that the reasonable profit language is permissive, not mandatory.[1606] For example, several LECs contend that, to avoid confiscation of their property, LECs are entitled to full operating expenses as well as the capital costs of doing business and a reasonable profit.[1607] The Ohio Consumers' Counsel, however, argues that the language of section

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[1599] *See* NYNEX comments at 42; USTA comments at 43.

[1600] *See* Ameritech comments at 70-71.

[1601] *See* PacTel comments at 65-66, *citing FPC v. Hope Natural Gas,* 320 U.S. 591 (1944) and *Jersey Central Power & Light v. FERC*, 810 F.2d 1168, 1172 (D.C. Cir. 1987).

[1602] Citizens Utilities comments at 17.

[1603] Time Warner comments at 52.

[1604] Illinois Commission reply at 15.

[1605] *See, e.g.,* PacTel comments at 65-66.

[1606] *See, e.g.*, AT&T reply at 31; Cox reply at 29; DoJ reply at 15.

[1607] *See, e.g.,* MECA comments at 44, 49; PacTel comments at 65-67.

252(d)(1) indicates that it is at the discretion of the state commissions to determine whether to allow rates to reflect a reasonable profit.[1608]

651. USTA contends that "purely forward-looking TSLRIC" should not be the price for interconnection elements because "telecommunications networks are mostly sunk costs."[1609] It argues that, when investment in facilities requires sunk and irreversible costs, a firm may not be able to recover this investment over the physical life of the facilities due to the risks of decreases in value resulting from future competition. USTA contends that allowing other carriers into the provision of local exchange service will subject incumbent LECs to these types of risks. It then claims that TSLRIC calculations do not appropriately account for these additional risks.

652. USTA also argues that the risks to which the incumbent LECs will be subject as a result of competition in the local exchange market include the risks from facing new competition, technological change, change in demand, and interest rates. It further argues that these risks will result in many situations in which the incumbent LECs may face a reduction in profits (downside risk) and no situations in which the incumbent LECs may see an increase in their profits. Thus, incumbent LECs must be compensated for these additional risks, according to USTA. It concludes that TSLRIC calculations fail to provide this compensation, stating "TSLRIC can be biased downward by a factor of three."[1610]

653. Similarly, Bell Atlantic asserts that, in a market where input prices are declining, a TSLRIC standard is not the appropriate standard because, "in a world of continual technological progress, it would be irrational for firms constantly to update their facilities in order completely to incorporate today's lowest-cost technology."[1611] Thus, it argues that because a carrier would not replace its entire existing set of facilities (a sunk investment) with the best available technology at a given point, the price of the best available technology understates the cost of providing service.[1612]

[1608] Ohio Consumers' Counsel comments at 26.

[1609] *See* USTA reply at Attachment 1 (Reply Affidavit of Professor Jerry A. Hausman), p.1.

[1610] *Id.* at 6. Presumably, by TSLRIC, Professor Hausman is referring to a TSLRIC assuming a risk free rate of return and a depreciation rate that encompasses the physical life of assets.

[1611] Bell Atlantic reply at Exhibit 1 (Declaration of Alfred E. Kahn and Timothy J. Tardiff), para.8a.

[1612] *Id.*

654. The Consumer Federation of America, disputing the incumbent LECs' claims regarding risk premiums, argues that risk premiums are reflected in the large returns incumbent LECs have already earned.[1613]

655. *Embedded Costs.* IXCs, competitive local entrants, and others interpret section 251(d)(1) as precluding states from setting rates by use of traditional cost-of-service regulation, with its detailed examination of historical accounting costs and reliance on an embedded rate base.[1614] These parties argue that some measure of forward-looking economic costs, not historical costs, should be the only basis for setting rates for interconnection and unbundled network elements because only forward-looking economic costs meet the statutory requirement in section 252(d)(1) that such rates be "determined without reference to a traditional rate-of-return or other rate-based proceeding." Potential new entrants and many other commenters argue that historical or embedded costs should not be included in the prices of interconnection and unbundled network elements.[1615] NTIA asserts that it is unwise to include in the prices for interconnection and unbundled elements an amount to recover historical costs when the size of any shortfall between historical costs and TSLRIC's forward-looking costs will not be determined for many years after interLATA entry.[1616] These parties contend that permitting incumbent LECs to recover embedded costs in the prices they charge competitors for interconnection and unbundled network elements, while the incumbents experience much lower incremental costs, will result in inefficiently high prices that will either cause new entrants to over-build existing systems instead of maximizing the efficient use of the existing incumbent LEC's network, or discourage entry and investment in

[1613] *See* CFA/CU comments at 61-63.

[1614] *See, e.g.*, AT&T comments at 47; LDDS comments at 60; MCI comments at 61-62; MFS comments at 59; Sprint comments at 43; Teleport comments at 46; Time Warner comments at 51; Frontier comments at 21; Excel comments at 9; ACSI comments at 54-55; WinStar comments at 37-38; GST comments at 29-30; *see also* Ad Hoc Telecommunications Users Committee comments at 30-31; DoJ comments at 27-32, reply at 14; Kentucky Commission comments at 4; Texas Public Utility Counsel comments at 33-34; Telecommunications Resellers Ass'n comments at 38; Michigan Commission comments at 14; Pennsylvania Commission comments at 29; Ohio Commission comments at 42-43; Attorneys General reply at 7-8.

[1615] *See, e.g.*, AT&T comments at 47; CFA/CU reply at 18-19; DoJ comments at 27-32; N. Economides comments at 3; Frontier comments at 21-22, reply at 13; Jones Intercable comments at 25-26; LDDS comments at 60; MCI comments at 61-62; MFS comments at 59; Michigan Commission comments at 14; Sprint comments at 43; Teleport comments at 46; TCC comments at 15-16; Texas Public Utility Counsel comments at 33-34; Time Warner comments at 51; WinStar comments at 37-38; *see also* Ad Hoc Telecommunications Users' Committee reply at Appendix A (Interconnection Pricing Standards for Monopoly Rate Elements in a Potentially Competitive Local Telecommunications Market), pp.2-6;

[1616] *See* NTIA reply at 28-29.

the local markets altogether.[1617] Moreover, opponents of embedded cost recovery maintain that these costs reflect past inefficiencies and their recovery does not create any incentive for incumbent LECs to maximize their network and operational efficiencies.[1618] Commenters also argue that embedded cost recovery permits incumbents to engage in anticompetitive, strategic, or discriminatory pricing by manipulating the cost of individual rate elements.[1619]

656. In response to claims that the incumbent LECs are entitled to recover embedded costs incurred as a result of their regulation, opponents of embedded cost recovery argue that, at the state level, incumbent LECs have been opting for incentive-based regulation and so have foregone the right to claim entitlement to recovery of embedded costs in exchange for the flexibility to price their services to meet competition.[1620] AT&T argues that, because the majority of the incumbent LECs' embedded plant was installed after 1990, the forward-looking replacement costs of this old plant may in many cases be higher than the incumbent LECs' embedded costs.[1621] MCI disagrees with incumbent LECs' claims that excluding historical costs will discourage future investment by incumbent LECs and argues instead that incumbent LECs make investment decisions based upon expected future earnings.[1622]

657. Most incumbent LECs and some other parties dispute the claim that historical costs are precluded by the statute,[1623] asserting instead that section 252(d)(1) merely prohibits the use of a rate-of-return *proceeding* to determine such rates.[1624] Incumbent LECs argue that any pricing methodology the Commission adopts should permit recovery of historical or

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[1617] *See, e.g.*, Competition Policy Institute comments at 8; TCC comments at 15-16.

[1618] *See, e.g.*, Ad Hoc Telecommunications Users Committee comments at 53-54.

[1619] TCC comments at 15-16

[1620] *See, e.g.*, GST comments at 29-30; WinStar comments at 38.

[1621] *See* AT&T reply at 33. For a detailed discussion, *see* AT&T reply at Appendix C (Affidavit of Lee Selwyn and Patricia Kravtin), pp.1-4.

[1622] *See* MCI reply at 15-16.

[1623] *See, e.g.*, Bell Atlantic comments at 37; BellSouth reply at 35-37; Colorado Commission comments at 34-35; GVNW comments at 35-36; Municipal Utilities comments at 19; NYNEX comments at 46-47; Ohio Consumers' Counsel comments at 23; PacTel comments at 65; Roseville Tel. comments at 6-8; Rural Tel. Coalition comments at 26-28; SBC comments at 88; TDS comments at 17-18; Texas Statewide Telephone Coop. Inc. comments at 7; USTA comments at 40.

[1624] *See, e.g.*, Bell Atlantic comments at 37; Municipal Utilities comments at 19; Ohio Consumers' Counsel comments at 23; Texas Statewide Telephone Coop. comments at 7.

embedded costs in the prices of interconnection and unbundled network elements.[1625] NYNEX specifically proposes a cost-accounting pricing methodology that places the burden on the incumbent LEC to identify the specific accounting data that would be associated with the particular type of interconnection requested by the competing carrier under section 251.[1626]

658. USTA cites reports that estimate that embedded costs that would not be recouped under a solely forward-looking pricing methodology are between $13 billion and $18.4 billion.[1627] Incumbent LECs contend that, because incumbent LECs must offset this shortfall of revenues against total costs that is created by a failure to recover embedded costs, they will be discouraged from investing to maintain and upgrade their networks in order to avoid the risk of again being unable to recover embedded costs.[1628] In addition, they argue that they incurred these embedded costs under federal and state regulatory oversight, which imposed on incumbent LECs social policy obligations and uneconomic costing practices, and that they therefore should be permitted to recover them.[1629] Incumbent LECs also assert that past investments were made under the belief that costs would be recovered, and that rates collected in the past did not reflect the risk that embedded costs might not be recovered in future rates.[1630] Several commenters argue that the opportunity to recover embedded costs through rates for interconnection and unbundled elements is particularly important for small and rural incumbent LECs.[1631] Finally, some parties also contend that, if they are not permitted to recover embedded costs, these costs must be recouped elsewhere, thus putting pressure on the states to recover these costs through local rates.[1632]

[1625] *See, e.g.*, Alaska Tel. Ass'n comments at 4-5; Ameritech comments at 60; Bell Atlantic comments at 36; Cincinnati Bell comments at 30; Lincoln Tel. comments at 11-12; Roseville Tel. comments at 7-8; SBC comments at 59; SNET comments at 29; USTA comments at 40; *see also* NECA comments at 6, reply at 8-9.

[1626] NYNEX comments 54-56, reply at 27.

[1627] USTA comments at 55.

[1628] *See, e.g.*, Bell Atlantic comments at Attachment 1 (Affidavit of Professor Jerry A. Hausman), p.2; Lincoln Tel. comments at 16-17; USTA reply at 23.

[1629] *See, e.g.*, Ameritech reply at 30-31; BellSouth comments at 57; Lincoln Tel. comments at 16-17.

[1630] *See* Bell Atlantic reply at Exhibit 2 (Declaration of Richard A. Epstein), p.4.

[1631] *E.g.*, Home Tel. comments at 4; NECA comments at 9; TCA comments at 8; Texas Statewide Tel. Cooperative, Inc. comments at 9; Bay Springs reply at 10.

[1632] *See, e.g.*, USTA comments at 56; Wyoming Commission comments at 31-32; *see also* New York Commission reply at 9; *cf.*, Alabama Commission comments at 24-25; Texas Commission comments at 23, 26.

659. Despite their objections to embedded cost recovery, some non-incumbent parties explain conditions under which some limited recovery should be permitted. For example, MCI argues that, although embedded costs should not be recovered, it would be appropriate to allow incumbent LECs to recover any depreciation reserve deficiency,[1633] which MCI estimates is only a small percentage of the residual between existing revenues and the revenues generated by a forward-looking, TSLRIC pricing of unbundled network elements.[1634] The Ad Hoc Telecommunications Users Committee asserts that, at a minimum, any nominal losses in economic value attributed to stranded investment should be weighed against the appreciation in value that incumbent LECs have experienced as reflected in share prices and market-to-book ratios.[1635] The Consumer Federation of America proposes that stranded investment might be recovered through an industry-wide recovery fund, if incumbent LECs can satisfy a rigorous set of showings to ensure that ratepayers are fairly treated.[1636] Finally, AT&T argues that, if the Commission determines that some portion of the residual should be recovered, it should be recovered through a competitively neutral, transitional, funding and distribution mechanism that will not distort competition.[1637]

660. *Opportunity Cost -- ECPR.* Incumbent LECs are the primary advocates for ECPR pricing of interconnection and unbundled network elements.[1638] They argue generally that ECPR is the approach that most closely parallels the method a firm in a competitive market would employ when faced with the opportunity of selling inputs to firms that intend to compete with it in its final product market.[1639] GTE asserts that the ECPR's purpose is to reward efficient entry into the market for the end product by ensuring that the incumbent LEC

[1633] A reserve imbalance exists when the carrier's actual "book" depreciation reserve differs from its "theoretical" reserve, which is the reserve which would exist if service lives and salvage values had been accurately forecast in the past. When the theoretical reserve exceeds the book reserve, the imbalance is a reserve deficiency. For most LECs the reserve imbalance is an overall deficiency. *Amortization of Depreciation Reserve Imbalances of Local Exchange Carriers*, CC Docket No. 87-447, Report and Order, 3 FCC Rcd 984 (1988).

[1634] *See* MCI comments at 73-75.

[1635] Ad Hoc Telecommunications Users Committee comments at 26-27.

[1636] *See* CFA/CU comments at 67-68.

[1637] *See* AT&T comments at 70-73.

[1638] *See, e.g.*, Ameritech comments at 91-93; GTE reply at 36-38; MECA comments at 50-52; PacTel comments at 69-71; SBC comments at Appendix A (Efficient Component Pricing Rule), pp.1-5; *see also* PacTel reply at Appendix C (Declaration of Richard D. Emerson).

[1639] *See, e.g.*, Rural Tel. Coalition reply at 28-30.

sells network access to itself and to its rivals on the same, nondiscriminatory terms.[1640] Thus, GTE claims, the ECPR sets prices for network elements that provide incentives for efficient entry and compensates incumbent LECs for the economic costs associated with sale of such elements.[1641] GTE further argues that ECPR accomplishes these tasks regardless of the market structure and regardless of the presence or absence of economic rents.[1642] SBC argues that the ECPR is equivalent to the avoided cost rule used for setting the prices of resold services and equivalent to the efficient imputation rule for pricing of retail services.[1643] Supporters of ECPR pricing also argue that prices will continue to move toward competitive levels where competition is provided by a more efficient carrier than the incumbent LEC.[1644]

661. New entrants and many other commenters oppose the use of the ECPR to set prices for interconnection and access to unbundled network elements.[1645] These parties argue that ECPR does not comply with the statutory mandate that interconnection and network elements be based on costs. They assert that using ECPR would allow incumbent LECs to retain monopoly rents and protect the incumbent LECs from competitive disciplinary market forces.[1646] Opponents of ECPR contend that ECPR pricing does not replicate a competitive environment, but instead perpetuates inefficient and anticompetitive aspects of the current pricing structure. Other commenters argue that the incumbent LECs may use ECPR to exclude or marginalize a more efficient rival in the complementary market by forcing the rival to operate on the higher end of its cost curve through higher interconnection charges. They also argue that prices based on ECPR create incentives for incumbent LECs to shift costs of

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[1640] GTE comments at Attachment 4 (An Empirical Analysis of Pricing Under Sections 251 and 252 of the Telecommunications Act of 1996), p.7.

[1641] *Id.* at p.I-i

[1642] *Id.* at p.III-7.

[1643] SBC comments at Appendix A (Efficient Component Pricing Rule), pp.1-5.

[1644] *See, e.g.,* Ameritech comments at 93; GTE comments at Attachment 4 (An Empirical Analysis of Pricing Under Sections 251 and 252 of the Telecommunications Act of 1996), p.III-6-8.

[1645] *See, e.g.,* Ad Hoc Telecommunications Users Committee comments at 55; ALTS reply at 26-29; Cable & Wireless comments 35; California Commission reply at 20; CFA/CU comments at 41-45; CompTel reply at 40-49; Cox reply at 29; DoJ reply at 11-13; Frontier comments at 23; Mass. Attorney General comments at 6-9; MCI comments at 70-71, reply at 16; MFS comments at 60 n.67; Ohio Consumers' Counsel comments at 25 n.7, reply at 15; Sprint comments at 59 n.33; Texas Public Utility Counsel comments at 36; Time Warner comments at 56-58; Telecommunications Resellers Ass'n comments at 41-42; WinStar comments at 41.

[1646] *See, e.g.,* Cable & Wireless comments 35; California Commission reply at 20; CompTel reply at 40; Mass. Attorney General comments at 6-8; Time Warner comments 56-58; Telecommunications Resellers Ass'n comments at 41-42.

their competitive services to their bottleneck services, which distorts competition.[1647] Finally, opponents of ECPR assert that ECPR pricing shields the largest share of costs possible from competition, preserves the status quo, and imposes a barrier to entry.[1648]

662. Baumol, Ordover, and Willig, principal authors of the theory, explain that ECPR is not applicable for pricing of interconnection and unbundled network elements because the existing end user rates for local telecommunications are not appropriate as a baseline for ECPR. They claim that cross-subsidies are common in the current rates, and rates depart systematically from pertinent costs. Baumol, Ordover, and Willig conclude that applying ECPR to existing rates would result in component prices that lock in the incumbent LECs' monopoly profits and pricing inefficiencies, and would attract inefficient entry, where rates are too high, and would preclude efficient entry where rates are too low.[1649]

663. *Universal Service Subsidies.* Most parties other than incumbent LECs and some state commissions agree that it would be inconsistent with both the cost-based rate requirements of section 252(d)(1) and the requirement in section 254(b)(5), that universal service support mechanisms "be specific [and] predictable. . ."[1650] for states to include any universal service subsidies in the rates they set for interconnection, collocation, and unbundled network elements.[1651] They argue that the 1996 Act requires that rates reflect the economic cost of providing network elements and interconnection and does not authorize subsidies that have nothing to do with economic costs.[1652] With regard to the requirements of section 254, these parties argue that, to the extent rates need to be subsidized for universal service purposes, the subsidy should be collected from all carriers on a non-discriminatory and

[1647] *See, e.g.*, N. Economides comments at 4-6.

[1648] *See, e.g.*, CFA/CU comments at 42.

[1649] *See* AT&T comments at Appendix C (Affidavit of William J. Baumol, Janusz A. Ordover, and Robert D. Willig), pp.8-9.

[1650] 47 U.S.C. § 254(b)(5).

[1651] *See, e.g.*, ACTA comments at 23; AT&T comments at 70-73; Competition Policy Institute comments at 20; CompTel comments at 73-74; DoJ comments at 56-59; MCI comments at 75; NEXTLINK comments at 29; Sprint comments at 61-62; Telecommunications Resellers Ass'n comments at 39 n.76; Teleport comments at 48-49; WinStar comments at 40-41, reply at 13-14.

[1652] AT&T and CompTel further contend that to permit any universal service subsidies in the rates set for interconnection, collocation and unbundled network elements would be to base rates on the embedded costs of incumbent LEC expenditures rather than the forward-looking economic costs of providing a network element as mandated by section 252(d)(1). *See* AT&T comments at 70-73; CompTel comments at 72-74.

competitively neutral basis.[1653] The Washington Commission relates its own experience of rejecting US West's request for a per minute universal service charge to cover "carrier of last resort" obligations and its finding that residential rates were sufficient to cover the costs of residential service.[1654]

664. In contrast, several incumbent LECs and state public utility commissions maintain that incumbent LECs should be permitted to recover their embedded costs in the rates set for interconnection, collocation, and unbundled network elements. These commenters claim that rates based on incremental costs alone fail to account for certain costs historically incurred to accomplish carrier-of-last-resort and universal service social policy objectives.[1655] The Attorneys General caution the Commission not to classify legitimate contributions to joint and common costs as impermissible implicit universal service subsidies.[1656]

665. Several parties comment on the issue of how universal service funding should be handled during the interim period between the effective date of this order and the effective date of the Commission's order implementing the section 254 universal service requirements in May 1997. AT&T proposes that the Commission adopt a competitively-neutral funding and distribution mechanism.[1657] CompTel proposes that the Commission grant a blanket waiver of incremental cost pricing for exchange access. Under CompTel's plan, pending completion of the section 254 proceeding, the incumbent LECs would continue to provide exchange access pursuant to their intrastate and interstate carrier-to-carrier access charge tariffs. At the conclusion of the section 254 proceeding, the Commission would determine whether the incumbent LECs are entitled to recover any portion of those revenues from competitive carriers and, if so, devise appropriate mechanisms for doing so. CompTel asserts that, by preserving the status quo for exchange access until those issues are fully considered

[1653] *See, e.g.,* ACTA comments at 23; AT&T comments at 69; Massachusetts Commission comments at 8-10; MCI comments at 75; Michigan Commission comments at 19.

[1654] Washington Commission reply at 6.

[1655] *See, e.g.,* Alabama Commission comments at 24-25; Bay Springs, *et al.* comments at 16; BellSouth comments at 57; Matanuska Tel. comments at 2-3; TDS comments at 20; SBC comments at 89; Western Alliance comments at 6-7; *but see* BellSouth comments at 57 (if the universal service proceeding establishes a federal fund or if the states establish explicit funds, there will be no need for subsidies to be built into interconnection and unbundled network element rates).

[1656] Attorneys General reply at 10-11.

[1657] AT&T comments at 73.