COMMONWEALTH OF KENTUCKYBEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF	)	
KENERGY CORP. FOR A CERTIFICATE	)	
OF PUBLIC CONVENIENCE AND NECESSITY	)	
FOR THE CONSTRUCTION OF A HIGH-SPEED	)	**Case No. 2021-00365**
FIBER NETWORK AND FOR APPROVAL OF THE	)	
LEASING OF THE NETWORK'S EXCESS CAPACITY	)	
TO AN AFFILIATE TO BE ENGAGED IN THE	)	
PROVISION OF BROADBAND SERVICE TO	)	
UNSERVED AND UNDERSERVED HOUSEHOLDS	)	
AND BUSINESSES OF THE COMMONWEALTH	)	

KENERGY CORP'S RESPONSES TO COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

KENERGY CORP. responds to **COMMISSION STAFF'S** second request for information as follows:

1. Refer to the application, generally. Provide the original net book value and estimated useful life, remaining useful life, and depreciation schedules of Kenergy's microwave-based communications system.

RESPONSE: The original book value of the microwave-based communication system is $2,267,178, accumulated depreciation is $2,058,785, and the remaining net book value is $208,393. The system is currently depreciating at a rate of $82,303 per year, so the microwave-based

communication system will be fully depreciated in approximately two-and-a-half (2.5) years.

WITNESS: TRAVIS SIEWERT

2. Refer to the application, page 4, paragraph 9.

a. Explain whether Kenergy has detected or experienced radio frequency interference within Kenergy's microwave-based communications system.

RESPONSE: Kenergy has not detected, nor has it – to its knowledge – experienced any radio frequency interference with any of our microwave based communications system. However, as noted in the Application Testimony of Jeff Hohn at p. 11, the widely acknowledged and anticipated growth in radio frequency communications presents greater threats to Kenergy's microwave-based communications system than past experience would otherwise suggest.

b. Explain the effects that radio frequency interference can have on Kenergy's microwave-based communications system.

RESPONSE: If interference would occur, it would not be systemic. Rather, it would be localized to a particular radio path. A path is a tower with a radio antenna aligned through the air to another tower with a radio antenna. Interference would probably manifest itself in occasional rather than constant "hits" to the communications path. For example, on a given radio path where telemetry or SCADA data was being carried from a substation to a central office, interference could cause temporary drop outs of that radio path which would

result in interruptions to the real time information which is being sent from the substation. The worst-case scenario for problems caused by interference would be that a dispatcher in a control center would be unable to see the real time data from a substation and would be unable to make a remote-control command to that substation. So, in the event of interference which was extreme enough to cause a communications failure from a substation, a dispatcher would be unable to remotely put a recloser control on hot line tag or one shot or issue a trip or close command and this would necessitate that a serviceman or lineman be dispatched to the sub to perform this function manually.

WITNESS: ROBERT STUMPH

3. Refer to Kenergy's responses to Commission Staff's First Request for Information (Staff's First Request), Item 3.

a. Explain how Kenergy will determine the expected growth of an area.

RESPONSE: Per subscriber growth rates have been forecasted out 10 years at a 29% per year peak consumption growth rate. All owned network fiber segments are upgradable to support the anticipated growth over the 10 years and much further into the future. Leased transport access

is expected to be a competitive market with multiple providers available to grow network capacity as needed.

The 29% percent growth rate was utilized based on industry reports about bandwidth growth and internal review of actual growth rates on established GPON deployments have been operational over 1 year with a mixture of subscribers utilizing 100 Mbps and 1 Gbps service tiers. Future analysis will continue to review those growth rates and track them over time to inform future network demand projections.

New home growth ranging from individual homes to entire subdivisions can be supported within the dark fiber capacity included with the initial fiber design and build with no, or minimal, additional middle mile fiber costs. Individual home additions are accounted for in the initial network designs and are supported with the addition of a "fiber tap" installed along the existing fiber cable. In the case of an entire subdivision developing, a "Fiber Hut" would likely be deployed within, or at the edge of, the subdivision that would utilize the existing fiber plant for network access. The fiber connecting homes inside of the subdivision to the fiber hut would require new construction, which would be the same as all other utilities.

b. Explain whether Kenergy plans to immediately size cables according to the expected growth of an area over the 30-year lifespan of the network or to make additions as an area grows.

RESPONSE: See combined answer in 3(c).

C. Explain whether Kenergy expects to maintain a level of capacity above expected demand in its fiber network.

RESPONSE: The access network and middle mile access rings between huts are 100% fiber based and utilization of the fiber strands are directed via the network operations team. Direct control of the middle mile network means that upgrades are capital hardware purchased that can be quickly undertaken without the need for partnerships with existing telecommunications carriers. All middle mile access rings are configured as LAG (IEEE Standard 802.3ad) groups initially, which allows for network capacity to be added quickly without major network reconfiguration.
As network usage dictates, available bandwidth on an individual PON leg can be increased via multiple options, including:

- **Removing the 2-way optical coupler in the telecommunications hut and connecting each PON fiber strand into a separate GPON port,**

resulting in doubling the bandwidth available to the original set of subscribers

- **Moving a single high bandwidth user to a different transport technology**
    - **Such as dedicated 1 Gbps Ethernet port for a business subscriber**
- **Overlay additional PON network technology (such as XGS-PON)**
- **Upgrade to new PON network technology**
- **Utilize spare fiber strands for new PON legs**

Specifically, regarding the first point of removing the optical coupler, this option allows for the doubling of last mile bandwidth available to the homes connected to the original PON port with minimal effort or expense to the network operator and could be completed for the entire network as needed. Network design parameters stipulate that fiber distribution cable be oversized as to not be fully utilized at the completion of the network build. The design threshold varies by fiber cable count between 50% and 80% maximum utilization. On the lowest end for example, a 12-count fiber cable that has 6 individual strands utilized (50%) is upgraded to a 24-count cable, leaving 18 unlit fibers for future use.

As network demand increases, fiber circuits and leased transport will

be upgraded to handle the additional bandwidth. Upgrade options include, but are not limited to:

- **LAG groups of multiple 10 Gbps links**
- **100Gbps links**
- **LAG groups of 100 Gbps links**
- **CWDM and DWDM technologies to increase capacity per fiber strand**

Typical PON latency across the access network is <200us downstream and <1700us upstream for GPON, XGS-PON and NG-PON2 over the length of the PON.

Utilizing actual traffic statistics for subscribers on existing GPON networks in service for over 1 year supporting a mix of 1 Gbps and 100 Mbps service offerings, a 30-minute average peak utilization of 3.47 Mbps of downstream traffic per GPON ONT was observed over a 2-week period in early November 2020. While upstream data traffic may grow in the future, current ratios continue to show that upstream traffic on average is less than 20% of downstream traffic in production networks servicing the anticipated subscriber types. Due do that ratio, downstream traffic patterns and data are utilized to drive all future forecast for network utilization trends.

Single ONT Bandwidth (Mbps)		3.49	4.5	5.8	7.5	9.7	12.5	16.1	20.8	26.8	34.6	44.6
		ONT's Supported at 29% Annual 30 Minute Peak Usage Growth Year										
		Oct-2020	Oct-2021	Oct-2022	Oct-2023	Oct-2024	Oct-2025	Oct-2026	Oct-2027	Oct-2028	Oct-2029	Oct-2030
Transport Bandwidth	1.2 Gbps	344	267	207	160	124	96	75	58	45	35	27
	2.4 Gbps	688	533	414	320	247	192	149	115	90	69	54
	10 Gbps	2,865	2,222	1,724	1,333	1,031	800	621	481	373	289	224
	20 Gbps	5,731	4,444	3,448	2,667	2,062	1,600	1,242	962	746	578	448
	30 Gbps	8,596	6,667	5,172	4,000	3,093	2,400	1,863	1,442	1,119	867	673
	40 Gbps	11,461	8,889	6,897	5,333	4,124	3,200	2,484	1,923	1,493	1,156	897
	100 Gbps	28,653	22,222	17,241	13,333	10,309	8,000	6,211	4,808	3,731	2,890	2,242

Utilizing this table, network planners can estimate future network capacity requirements based on subscriber growth within the standard network link speeds. For example, a 10Gbps Internet DIA connection would be expected to support 2,222 peak time subscribers averaging 4.5 Mbps download utilization in October of 2021.

It would be impractical to deploy network capacity in all network segments today for expected network demand 3, 5, or 10 years into the future, so network upgrades will be a continual business process. As additional subscribers join the network and bandwidth needs increase, network capacity will be added. The table above will assist the technical team in discussions with business leadership on expected timing and costs of those upgrades well in advance of actual need.

WITNESS: JONATHAN CHAMBERS

4. Refer to KRS 278.5464(3)(a) which provides, in pertinent part, that, "[a] distribution cooperative may facilitate the operation of an affiliate engaged exclusively in the provision of broadband service to unserved or underserved households and businesses. . . ." Assuming that the Commission concluded that Kenect is not the affiliate providing broadband service, and therefore could not sublease Kenergy's excess fiber capacity because neither Conexon nor Conexon Connect are affiliates as described in KRS 278.5464(3)(a), explain what changes Kenergy would need to make to its proposed project in order for it to comply with KRS 278.5464.

RESPONSE:

Refer to KRS 278.5464(3)(a) which provides, in pertinent part, that, "[a] distribution cooperative may facilitate the operation of an affiliate engaged exclusively in the provision of broadband service to unserved or underserved households and businesses...." Assuming that the Commission concluded that Kenect is not the affiliate providing broadband service, and therefore could not sublease Kenergy's excess fiber capacity because neither Conexon nor Conexon Connect are affiliates as described in KRS 278.5464(3)(a), explain what changes Kenergy would need to make to its proposed project in order for it to comply with KRS 278.5464.

RESPONSE: **Any such conclusion by the Commission would (i) frustrate the express policy, purpose, and intent of KRS 278.5464; (ii) exceed the statutory scope of the Commission's jurisdiction by attempting to**

regulate Kenect (a nonjurisdictional entity) in the provision of broadband services, contrary to KRS 278.5462 and federal law; and (iii) likely result in reversible error.

As an initial matter, an appropriate interpretation and implementation of KRS 278.5464 requires a broader context than an isolated review of certain parts of subsection (3)(a). Elsewhere in KRS 278.5464, for example, the General Assembly expressly declared that "[t]he provision of broadband service to residential, commercial, and industrial customers is critical to securing a sound economy and promoting the general welfare of the Commonwealth." KRS 278.5464(1)(a). It likewise declared that "[d]istribution cooperatives are able to access and leverage federal funding to extend and enhance the availability of broadband service to Kentucky residents who are currently unserved or underserved." KRS 278.5464(1)(b). In that broader context, the statute clearly supports broadband proliferation efforts like those being pursued by Kenergy and its affiliate, Kenect.

Furthermore, the Commission should reject any interpretation of the statutory phrase "provision of broadband service" (KRS 278.5464(3)(a)) as predetermining that Kenect's subleasing of certain Kenergy-owned facilities to Conexon Connect, co-marketing of services to be provided

over those facilities, and/or contracting with Conexon Connect for other potential service arrangements could disqualify Kenect from qualifying as a broadband services provider under KRS 278.5464.

While KRS 278.5464 does not specifically define "provision of broadband service," the phrase is not without significant color. Specifically, KRS 278.5462 – using the exact same phrase, "provision of broadband services" – cautions:

> **The provision of broadband services shall be market-based and not subject to state administrative regulation. Notwithstanding any other provision of law to the contrary except as provided in subsections (3) and (4) of this section, no agency of the state shall impose or implement any requirement upon a broadband service provider with respect to the following:**
>
> **(a) The availability of facilities or equipment used to provide broadband services; or**
>
> **(b) The rates, terms or conditions for, or entry into, the provision of broadband service.**

KRS 278.5462 (emphasis added).

Consequently, if the Commission were to conclude that "Kenect is not the affiliate providing broadband service," it would violate the express statutory prohibitions set out in KRS 278.5462. Kenect's decisions to sublease fiber to, co-market broadband services with, and contract for operational services to be provided by a third-party service provider (Conexon Connect in this case) are outside the scope of the Commission's jurisdiction. Moreover, such a determination would

instead – in direct contravention of KRS 278.5462 – unlawfully impose a requirement that Kenect must satisfy certain facilities ownership obligations, or must not contract with third-parties to provide co-marketing, operational, or other services in order to qualify as a provider of broadband services under KRS 278.546-5464. The law expressly forbade the Commission or even any "agency of the state" from imposing such requirements. *See* **KRS 278.5462(1).**

Finally, even the Commission's own proposed pole attachment regulations stop well short of imposing such obligations on a "Broadband internet provider," which is defined merely as "a person who owns, controls, operates, or manages any facility used or to be used to offer internet service to the public…." Proposed 807 KAR 5:015 Sec. 1(2) (emphasis added). As Kenergy's lessee, Kenect clearly controls and manages the use of the proposed fiber over which the internet service will be made available to the public. That Kenect is pursuing additional contractual arrangements with Conexon Connect related to the delivery of broadband to Kenergy's members is ultimately irrelevant; Kenect qualifies as a "broadband internet provider" even under the plain language of the Commission's own proposed

regulations.1

Moreover, under any other interpretation (including that proposed by this data request), other putative broadband providers and even the KentuckyWired project, for example, might be excluded from pole attachment rights, which seems entirely anathema to bipartisan efforts to expand broadband service to unserved and underserved areas of the Commonwealth. (*See* "Better Kentucky Plan," available at https://governor.ky.gov/priorities/better-kentucky-plan#BetterInternet.)

Consequently, under KRS 278.546-5464 ("Broadband and Other Telecommunications Technologies") – and not merely subsection (3)(a) of KRS 278.5464, read in isolation -- the Commission should determine that Kenect is an affiliate engaged in the provision of broadband services.

The General Assembly has already commanded that "[t]he [C]omission shall grant approval of the leasing of excess capacity, the issuing of securities or evidences of indebtedness, or the pledging of assets upon a finding the proposal is in the public interest." KRS

1 Notably, the proposed regulations find their statutory authority under subsection (6) of the very same statute as is at issue here: KRS 278.5464.

278.5464(3)(b). In this case, the finding that the proposal is in the public interest is simple, as the General Assembly has defined the public interest to expressly include the provision of broadband services to the Commonwealth and recognized the special status of distribution cooperatives in facilitating that interest. *See* **KRS 278.5464(1), (4);** *see generally* **KRS 278.546.**

Here, Kenergy proposes to facilitate Kenect's work to ensure that broadband services are finally made available to Kenergy's unserved and underserved members who have, for so long, been neglected by the large, national cable companies (like the principal members of the KBCA) and large, national telecommunications companies in the region. *See* **KRS 278.5464(1).**

Consequently, Kenergy does not need to make any changes to its proposed project in order for it to comply with KRS 278.5464 and all applicable law.

WITNESS(ES): COUNSEL

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By _____
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CERTIFICATE OF SERVICE

I hereby certify that the foregoing was served by electronic filing to the Kentucky Public Service Commission, 211 Sower Blvd., Frankfort, KY 40602 with a copy served electronically to the Kentucky Attorney General, Office of Rate Intervention, 700 Capital Avenue, Suite 20, Frankfort, KY 40601-8204, and James W. Gardner and M. Todd Osterloh, Sturgill, Turner, Barker & Maloney, PLLC, 333 W. Vine St., Suite 1500, Lexington, KY 40507, on this 7th day of January, 2022.

_____
J. Christopher Hopgood

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF	)	
KENERGY CORP. FOR A CERTIFICATE	)	
OF PUBLIC CONVENIENCE AND NECESSITY	)	
FOR THE CONSTRUCTION OF A HIGH-SPEED	)	**Case No.**
FIBER NETWORK AND FOR APPROVAL OF THE	)	**2021-00365**
LEASING OF THE NETWORK'S EXCESS CAPACITY	)	
TO AN AFFILIATE TO BE ENGAGED IN THE	)	
PROVISION OF BROADBAND SERVICE TO	)	
UNSERVED AND UNDERSERVED HOUSEHOLDS	)	
AND BUSINESSES OF THE COMMONWEALTH	)	

(Staff Second Data Request - Item 1)

I verify, state and affirm that the data request response attached hereto and filed with this verification is true and correct to the best of my knowledge and belief formed after a reasonable inquiry, and I ask that I be added as a witness for this information.

Travis Siewert

STATE OF KENTUCKY
COUNTY OF Henderson

The foregoing was signed, acknowledged and sworn to before me by TRAVIS SIEWERT this 4th day of January, 2022.

My commission expires 4-23-2025

Haleigh Emerson KYNP28086

Notary Public, State of Kentucky at Large

(seal)

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF KENERGY CORP. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF A HIGH-SPEED FIBER NETWORK AND FOR APPROVAL OF THE LEASING OF THE NETWORK'S EXCESS CAPACITY TO AN AFFILIATE TO BE ENGAGED IN THE PROVISION OF BROADBAND SERVICE TO UNSERVED AND UNDERSERVED HOUSEHOLDS AND BUSINESSES OF THE COMMONWEALTH	)	**Case No. 2021-00365**

(Staff Second Data Requests B Item 2)

I verify, state and affirm that the data request response attached hereto and filed with this verification is true and correct to the best of my knowledge and belief formed after a reasonable inquiry, and I ask that I be added as a witness for this information.

Robert Stumph 1/4/21

STATE OF Kentucky
COUNTY OF Henderson

The foregoing was signed, acknowledged and sworn to before me by ROBERT STUMPH this 4 day of January, 2022.

My commission expires 9-24-22

(seal)

Notary Public,
Notary Public ID#: 609381

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF KENERGY CORP. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF A HIGH-SPEED FIBER NETWORK AND FOR APPROVAL OF THE LEASING OF THE NETWORK'S EXCESS CAPACITY TO AN AFFILIATE TO BE ENGAGED IN THE PROVISION OF BROADBAND SERVICE TO UNSERVED AND UNDERSERVED HOUSEHOLDS AND BUSINESSES OF THE COMMONWEALTH	)	**Case No. 2021-00365**

(Staff Second Data Requests B Item 3)

I verify, state and affirm that the data request response attached hereto and filed with this verification is true and correct to the best of my knowledge and belief formed after a reasonable inquiry, and I ask that I be added as a witness for this information.

Jonathan Chambers

STATE OF MARYLAND
COUNTY OF MONTGOMERY

The foregoing was signed, acknowledged and sworn to before me by JONATHAN CHAMBERS this 7th day of January, 2022.

My commission expires 02/07/2025

HAEKANG YOO
Notary Public - State of Maryland
Montgomery County
My Commission Expires Feb 7, 2025

(seal)

Notary Public,
Notary Public ID#: