

NEK Community Broadband

Tech Committee Meeting Minutes

November 24, 2021; 6-7pm

Attendees: Jami Jones (clerk), Shawn Burroughs (chair), Ray Lanier, Noah Armstrong

Agenda Review- 2min

Updates-

- Shawn sent a document for review on pricing for the GenSURE Fuel Cell System.
 - Ray- it would need a 5x7 pad in addition to the space that the OLT would occupy, but is less than what a generator would occupy. The price is good.
 - Shawn- we may be able to drive down the price per unit if we buy in bulk, and they are expandable and scalable for future use.
 - Ray will take a closer look at the quote, and consult with Christa.
 - Ray- we may have to spend money on an actual shelter to protect other provider's equipment, and back-up power at a higher requirement.
 - Ray- why do we need that kind of back-up? We are anticipating having town clerks, businesses, and emergency services on the network. We need back-up power that can take the load with ease.
 - Shawn was willing to do more research if needed.
 - Ray- NRTC is looking at the Layer 3 capability of the network.
 - Ray- what was the lead time?
 - Shawn- nothing yet, sounded like some quantity in stock, but would depend on the amount of the ask.
 - Ray- Fiber build could potentially happen in the spring, and first electronics may not be built until next summer.
 - Shawn- we would need to decide on storage and timing of shipping as well.
 - Ray- We would have savings on long-term expenses (such as fuel).
- HUB huts/shelters - Ray

New Business-

- GPON vs XGS-PON-
 - GPON wavelengths are what they are, a vendor that we are looking at does GPON and XGS on the same fiber. We could offer the extra wavelength to an

RDOF area. The cost difference is not much from an OLT point of view, roughly \$11 per customer.

- Noah- is there a significant benefit?
 - We could have the fiber in the RDOF areas, we could use XGS and the RDOF area would get the GPON. There may be availability for the power/utility companies to put their smart meters through the fiber, which could potentially save some revenue for the CUD.
- Noah- if the power company is not interested, what are the other benefits?
 - Ray- it could allow another provider to service the same area with a lease agreement.
- Noah- What would make the GPON lesser?
 - Potentially a question of speeds and price competitiveness.
- Noah- it could give more options to the customer.
- Ray-Utility services are starting to provide internet services this way.
- Shawn-
- Noah- for the cost, overbuilding for the future makes sense to go ahead with it.
- Ray- it is easy to upgrade through a card as well.
 - Noah- a network adapter card?
 - Ray- STPs are cards the size of a pill bottle which contain the laser or receiver. You plug it in and it tells the network to function with XGS or GPON. It would go on the board, the fiber optic cord would be plugged into the board. The cost difference is found in those plug-in elements
- PON high power levels Vs. Remote Cabinets
- Selecting Alternate XGS-PON Wavelengths for greater reach
- Substations Vs. Population Centers
- Express remotes Vs. Utility powered remotes
 - Noah- what do we mean by remotes?
 - Ray- the vendors of the OLTs offer a remote OLT (24inx12inx12in) and can be mounted on the pole or on the strands. Can power them differently. Express- a copper pair to power from a larger OLT. Or more reasonably, a local power with battery back-up, can have 128 customers with little construction, connecting into the power company. Looking into it for the more remote areas where only a few people will be served.

- NRTC states that you can deploy faster, less cost, and go farther (approximately 20 kilometers) into those end premises where a whole cabinet would not make sense.
- Noah- is a remote like a repeater/ amplifier?
 - Ray- yes, one going in with a backbone, and splitters. No degradation of the service as long as you are in the remarked distance/length.
 - Nothing has been decided.
- Noah- do we have more information on partnerships with other ISPs and their equipment?
 - Ray- discussions over serving them dark fiber vs lit fiber and the XGS/GPON. NEK CUD equipment would be in the cabinet.
- Noah- some areas in Glover may be available for an OLT cabinet, but will need to ask more questions.
 - Ray- another potential area is near Shadow Lake.
 - Noah- the Energy Committee may be good advocates in Glover.
- Ray- it is hard to be able to do the checks on generators that the NEK does not own, we are considering using our own back-up power so that we can ensure reliability.
- Looking more toward population centers for OLT cabinets, except for where the substations are. Population Centers usually mean within the center of the town, which would give the fiber a better split ratio, with minimal degradation of service. Deployment off of the roads is also easier and more cost effective because of the way the roads are set up within a town.
- Ray- Waitsfield has been helpful. We are looking at how to educate the board members on how and why we are moving forward the way that we are.
- Ray- other considerations for back-up power, maintenance, monthly check-ins, volume levels.

Other Business-

Adjourn

Respectfully submitted,

Jami Jones, NEK Community Broadband Clerk