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Høringssvar vedr. første modeludkast af LRAIC-fastnet modellen

Erhvervsstyrelsen har den 4. februar 2020 udsendt et første modeludkast af LRAIC-fastnet modellen i høring med frist fredag den 6. marts 2020.

Dansk Energi repræsenterer de lokale og regionale energiselskaber med fibernet – i det følgende benævnt fibernetselskaberne. Dansk Energis høringssvar består af tre dele:

1. Generelle bemærkninger til LRAIC-modellen og styrelsens modelrevision
2. Comments on first draft model
3. Consultation questions – Q&A

Ad 1: Indledende bemærkninger til LRAIC-fastnetmodellen og styrelsens modelrevision

Erhvervsstyrelsen lægger op til en ny generisk LRAIC-fastnetmodel, som vil kunne finde anvendelse overfor én eller flere udbydere udpeget som havende en stærk markedsposition (SMP).

Der er inden for de sidste par år sket en markant brancheudvikling i retning af kommercielle aftaler om adgang til energiselskabernes fibernet. En lang række fibernetselskaber har allerede indgået aftaler med forskellige indholdsleverandører, der nu forbereder en lancering af tjenester på fibernettene, mens flere fibernetselskaber er i fuld gang med at foretage den nødvendige standardisering af it-systemer, aftalevilkår mv. for at sikre en nem fremtidig adgang for indholdsudbydere til at udbyde tjenester på nettet.

Uanset om Erhvervsstyrelsens LRAIC-priser bringes i anvendelse eller ej, så udgør de et vigtigt referencepunkt for den generelle engrosprissætning af bredbånd i Danmark.

Dansk Energi finder det derfor afgørende, at den nye LRAIC-fastnet model understøtter fibernetselskabers mulighed for tilbagebetaling af afholdte investeringer i fibernet i både by- og landområder og tilskynder selskaberne til fortsat at investere.

Dansk Energi finder det ligeledes afgørende, at LRAIC-modelleringen og Erhvervsstyrelsens efterfølgende anvendelse af modelleringen, giver incitamenter til en fortsat teknologisk fornyelse. Eksempelvis ses der en klar markedstendens i retning af en konvertering af PTP-net til

GPON-net, da GPON-teknologien har udviklet sig til den foretrukne løsning på verdensplan. En sådan teknologisk udvikling må ikke blive bremset af forkerte incitamenter i LRAIC reguleringen.

Dansk Energi er bekymret over kompleksiteten i det udsendte modeludkast – dette gælder både Excel-modellen og R-modellen. Graden af kompleksitet og manglende gennemskuelighed i modeludkastet kan give anledning til retssikkerhedsmæssige betænkeligheder.

Excel-modellens brug af matrix formler, og makroer, der sætter tal ind i modellen uden at man i den enkelte celle kan se, hvilken makro, der har sat det pågældende tal ind, hindrer muligheden for sporbarhed, hvilket er en vigtig forudsætning for at kunne validere datagrundlag og spore eventuelle fejl i modeludkastet.

Samme bekymring gør sig også gældende i forhold til R-modellen, der indeholder et stort antal scripts (ca. 45) som bl.a. anvendes til modellering af knudepunkter og beregning af det nødvendige antal gravekilometer i et givent område.

Dansk Energi har overfor Erhvervsstyrelsen og styrelsens eksterne konsulenter (Axon Group) allerede påpeget modellernes kompleksitet, som betyder, at man end ikke umiddelbart kan udlede simple nøgletal som eksempelvis gennemsnitsprisen for en stikledning.

Dansk Energi opfordrer til, at modellerne gøres mere transparente og operationelle, så der i de kommende høringsrunder gives reel mulighed for at validere datagrundlag og modelforudsætninger.

Dansk Energi finder det også problematisk, at den anlagte høringsmetode ikke giver det enkelte fibernetselskab mulighed for at validere R-modellens resultater om eksempelvis antallet af gravekilometer op mod egne data. Antallet af gravekilometer er den ubetinget største omkostningsdriver i modellen.

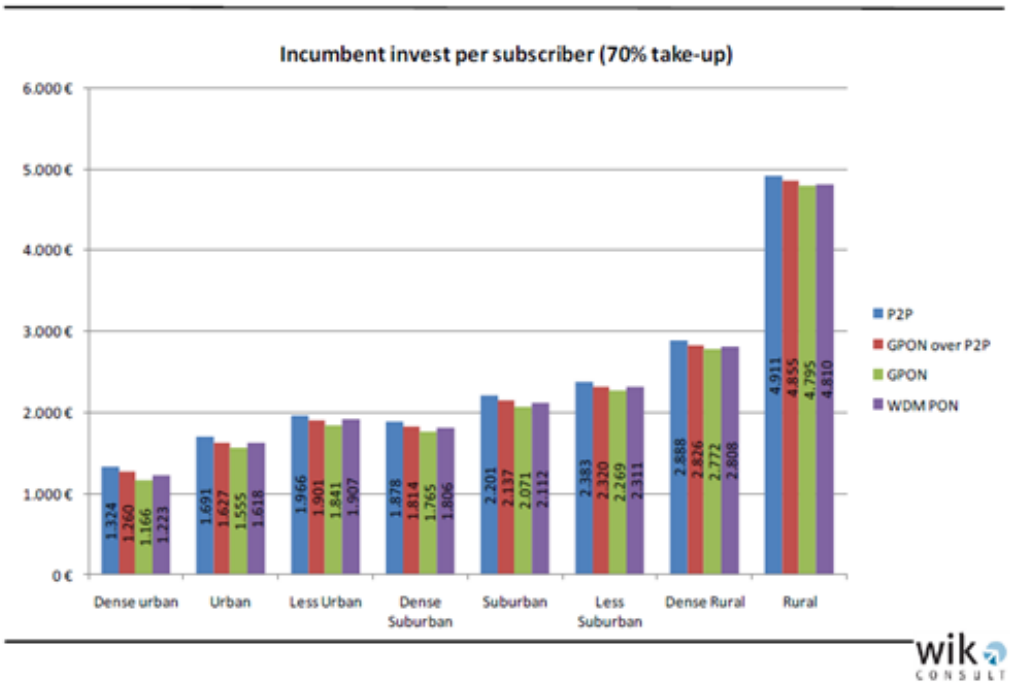
Dansk Energi har forståelse for, at der knytter sig en række fortrolighedshensyn til de foreliggende modeller – både Excel-modellen og R-modellen – som begge bygger på TDC's net og datainput. Ikke desto mindre giver den begrænsede mulighed for at validere LRAIC-modellens resultater anledning til stor bekymring blandt fibernetselskaber, hvorfor Dansk Energi skal opfordre til, at Erhvervsstyrelsen skaber bedre grundlag for at en sådan validering kan finde sted.

Grundet modellens kompleksitet og den begrænsede mulighed for at validere datagrundlag og modeludsætninger, er Dansk Energi nødt til at tage forbehold for at komme med flere bemærkninger senere i processen – også for så vidt angår allerede behandlede forhold.

Dansk Energi er stærkt overrasket over det første modelresultat, hvor 'PON fibre' er prissat markant lavere end 'PTP fibre' – hvilket må skyldes, at modellen opererer med en markant lavere omkostningsbase for PON net. Dette på trods af, at gravearbejdet (graveomkostninger) for udbygning af de to typer netværk fra central ud til slutkunde (access-net) er tilnærmelsesvis den samme – hvis ikke identisk. Den beregnede omkostningsforskel mellem PON og PTP står i skærende kontrast til den alment accepterede antagelse om, at PON-teknologien kun er

marginalt billigere at etablere end PTP - hvilket nedenstående figur fra en WIK-Consult analyse af omkostningsforskelle for de forskellige typer net-arkitekturer også ganske tydeligt illustrerer[1].

Figure 3-7: Total investment per subscriber and cluster at 70% market share (excl. invest in IPTV equipment)



Dansk Energi har nedenfor under punkt 2 kommenteret nærmere på modelleringen af PtP og PON.

2. Comments on first draft LRAIC model

NGA premium

The model is prepared to calculate NGA premium. But by mistake it doesn't calculate NGA premium for trenching and holes in the fibre access network. In sheet 0B, cell L134..139, and L139..140, shall be changed to "Yes".

Another related issue is the L3 access, aggregation, distribution and core network elements. None of these are subject to NGA premium in the model. We know that the model is based on TDC, where some elements in these layers are used for both copper, coax and fibre. We understand that these layers are not subject for NGA premium for the copper network. But for NGA, i.e. fibre, these layers should be subject to NGA premium as well. For the Danish Energy (DE) operators the L3 access, aggregation, distribution and core network is a necessary part of their NGA investment, and therefore subject to the NGA premium.

[1] https://www.wik.org/uploads/media/Vodafone_Report_Final_WIKConsult_2011-01-10.pdf

WACC
The model calculates all investments made in the modelled operator's network since 2005. The economic calculations in the model is performed using the actual (2020) WACC value for all years covered in the model (2005-2038).

Parameters such as the risk-free interest rate, has changed significantly from 2005 to 2020. The risk-free interest rate is at the moment at a historic low level. Investments made in the past were based on a financial situation, which differs significantly form todays financial markets. DE ask DBA to change the model, so that the model use a historic WACC for each year in the past. This will reflect the financial situation at the point of time where the investments were done.

In addition, DE questions whether it is correct to use the historically low interest rate level for the coming years (2021-2038). DE recommends that the WACC for future years is be based on a reliable forecast of the risk-free interest rate.

PON/PTP
The model of TDC is a mixture of PON and PTP in the same areas. The aggregated costs for PON and PTP are allocated to the PON and PTP products in what seems to be an arbitrary allocation. An example is the cost allocation used on trenching cost on the category "fibre above SDP". The cost allocation key for PON connections is 1/32, while it is 1 for PTP connections. Using these allocation keys between the two technologies makes it almost cost free for the PON technology to reach the secondary distribution point form the central office. DE strongly recommends solving this issue.

It is not common practice for fiber operators to implement a mixture of PON and PTP in the same areas. Therefore, DE recommends that the model identifies the central offices coverage areas to be either PON or PTP (i.e. never a mixture). DE believe that this model change will bring the model closer to the practice performed in real life, and this change will solve the unfortunate cost allocation as mentioned above.

Drop Cable
In the "Model Descriptive Document" it is shown how the drop cable length will be adjusted by a percentage for non-optimal length. DE agree that such an adjustment shall be performed. The adjustment factor can be found in the model, in sheet 1C, cell E96. But the adjustment factor is not implemented correct in the model, as only copper is sensitive to changes to the non-optimal length factor. The model shall be changed, so the length of fibre drop wires will be adjusted as well.

Drop Cable – individual installed drop wires
The cost of the drop wire installation depends on when it is established. Drop wires can be installed while the main trenching in the street is done, or it can be installed afterwards. Drop wires which are installed afterwards are more expensive to complete. Mainly because of the lack of scale. Below, you will find a list of tasks which are more expensive when making installations afterward:

- Design of a single drop wire in GIS system will be more time consuming per wire, compared to the main roll-out.

- Administration and processing the application for the trenching permission from public authorities.

- External contractor costs for the execution of one customer drop wire, will include extra transport of machinery and workers.

- Extra cost for the installation of one NTP (extra transport costs).

- Final documentation of the drop wire in GIS-system.

One of DE's members will provide confidential data, which will show the extra costs related to an individual installation of a drop wire.

As there is a significant difference in costs, the model should be extended, so the model can distinguish the two different drop wire installations. Furthermore, it is expected that the share of individual installations will increase in the future, as the main rollout will be finished within a few years.

Another factor can probably increase the number of individual established drop wires. Fibre operators have been able to focus their marketing in areas where they will be present in near future. But when opening the fiber networks, it is expected that service providers will demand fiber from the entire coverage area, without having the different costs in mind.

Architecture and raw fibre in PON
In the "Model Descriptive Document" page 34 (exhibit 4.16) the architecture for TDC fibre network appears, which is starting point for the price modelling. DE draws attention to the construction of the architecture for PON which does not apply for all fibre networks in Denmark. An operator's company size and supply of infrastructure technologies (copper, fibre, coaxial) has a large influence on the fibre fetworks architecture. In Denmark a lot of fibre fetworks are owned by smaller companies with fibre as the only infrastructure technology.

Specific for smaller companies it means that traffic will go directly from distribution network to passive access network (Cf. "Model Descriptive Document" page 34 – exhibit 4.16).

The above diversity in architecture across Fibre Networks makes it unclear how the definition of POI0, POI1, POI2 and POI3 is defined in the architecture, and based on that, how the price modelling will be for a deviating architecture. DE ask DBA to clarify the definition of POI0, POI1, POI2 and POI3, and to specify where they are located in the architecture.

DE draws attention to the fact that the physical location of FDP is individual for the fibre companies. Typically, 32 homes past will be assembled in the FDP. This means that there will be between 40-500 meters of fibre between the customer location and the FDP. It is DEs understanding that the model will take this into account, based the exact location of the operator's FDP – can DBA please confirm that?

Be further aware that the splitter is not located in the street cabinet (FDP) but in splitter cabinet (DP) – further back in the network. Distance between the two cabinets is approximate 1-2 km. The reason for street cabinets as forwarded cabinets is a practical matter in connection with end-user installation.

When the architecture is fully aligned, it will probably trigger more clarifying questions and objections, which is not possibly at the moment with the above ambiguities.

In general DE does not consider PON to be suitable in providing raw fibre, based on the basic architecture in the PON network. In practice the termination point will be very close to the end-user. It requires that the service provider is establishing a parallel Backhaul network. It also requires establishment of new street cabinets as existing street cabinet isn't dimensioned to hold service providers backhaul and splitter equipment. DE finds it highly questionable whether this can be done in practice.

Fully depreciated assets
The model has a feature where fully depreciated assets can be removed from the costing of copper and coax, to fulfil the EU recommendation. DBA/Axon describe how they based on FAR data from 2018 have been able to estimate the percentage of fully depreciated assets in the copper access network to be 36,8 pct., and 27,1 pct. in the TDC Coax network.

DBA/Axon describe that it has been difficult to estimate these factors, and that three factors can lead to under- and over-estimation of the fully depreciated asset factors. DBA/Axon ending up suggesting that a fully depreciated asset factor set to 50 pct. shall be used for both copper and coax.

DE recommends that the model use separate fully depreciated asset factor's in the copper and coax calculation, i.e. one factor copper, another factor for coax. Especially when the estimates show approx. 10 percent points difference between the two networks.

DE recommends that the fully depreciated asset factors shall be based on facts or objective estimates. This means that the estimated factors shall be used, instead of trying to guess if the estimates were under- or over-estimated. We believe that DBA/Axon made the best estimate that it is possible to make.

As mentioned in DE's response to the "Model Reference Paper" the exclusion of fully depreciated assets can have a negative influence on the incentive to invest in fiber access:

Excluding fully depreciated asset will lead to lower regulated prices. The consequence is, that it will be even harder for DE's members to compete in areas where the regulated prices become unnatural low. Therefore, DBA should be careful when excluding fully depreciated assets in the cost base, as the consequence can be a slower roll out of fiber networks, if the price competition becomes too tough.

Cost of crossing streets
The model assumes for most roads, that the operator trench in only one side of the road. The houses located on the other side of the road will be reached by shooting the fiber under the road. The model only uses one trenching cost from SDP to the user. So, the model doesn't

consider the extra costs when crossing a street is necessary. Shooting a fiber requires a hole to be dug on both side of the road, before shooting the fiber. The model should be able to take the extra shooting cost into consideration.

In house cabling etc.
The model doesn't include any cost related to inhouse cabling. The model calculates the drop cable. The cost for the drop cable is dependent only on its length according to the model. So, it appears as if the model calculates the cost of a cable delivered at the outer house wall. The model shall be further developed to include costs for boxes, drilling, in-house cabling, etc.

Copper shut down
The model has been prepared to model a shut-down of the TDC copper network. The modelling assumes that all of TDC demand for TDC's copper will be added to the demand for TDC's fiber, i.e. no copper demand will go to coax or mobile broadband. DE finds this assumption to be unlikely. DE believes that the demand will be covered by several different technologies, when TDC shut down the copper platform.

Assumptions, roll out, and aggregated demand
The model assumes, that the operator rolls out fiber to the addresses with the least cost. This will result in incorrect costing in the model, especially if two operators plan to cover the same area. If both operators expect to cover 50 percent of the area, each operator's model, will be based on the costs related to the 50 percent of addresses with least cost. The consequence will be, that the results from both models will be too low. DE suggests the model assumption to be changed. The assumption shall be changed, so that future roll out will pick addresses with high cost instead of choosing addresses with least cost. Fibre operators face a market situation where addresses with least or average cost, especially including multi-dwelling-units (MDU's), are already covered by coax and/or Fibre-LAN networks. DE's members have done a lot of its fibre roll-out in rural areas which are mainly covered by single dwelling units (SDU's). If the model shall reflect the actual market situation, it shall connect a high share of addresses with high cost.

The example with two operators covering the same city shows another problem in this process. The demand of the different operators is not consolidated. This can bring us in a situation where the aggregated demand in the models for e.g. ten regulated operators exceeds 20 million. DE understands that the models cannot allocate each single customer to an operator, but it should be possible to limit the aggregated demand to the number of potential customers in Denmark.

If all models are based on higher demand than what is realistic, then all model results will become too low, as all the models are based on a degree of economy of scale, which never will be obtainable. DBA argued at the meeting, that it will not be a problem, as operators will only have the cost if they have the customer. DE does not agree in this statement. There is an economy of scale issue to be aware off. And it is not correct that the operator only has the cost if they get the customer. There is a high initial investment of covering a new area, and a lot of those costs are the same whether you obtain 80 percent take up in the area, or just 10 percent take up. I.e. it is not correct to say, that you will only have the cost if you get the customer. That statement can only be relevant for a few assets, such as the drop wire.

Ancillary services

DE is worried if the services described as ancillary services are based on realistic input. DE have no, or only little experience with these interconnect products. We must check what kind of input we have available, then we will try to comment on the time spend on each task. Can DBA please describe each single service? The precise content of each single service is unclear to DE – can DBA for example describe the exact tasks covered by the service “Migration service from fibre BSA to Raw fibre”.

3. Consultation questions – Q&A

Please find attached Excel file.