

Features of Nordic, Dutch and Estonian single-bill approaches – voluntary or obligatory

Finnish Energy, Pekka Salomaa, June 2018 (updated February 2019)

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Sources:

Denmark (**DK**): Henrik Gunnertoft Bojsen (Dansk Energi) April 17, 2018

Estonia (**EE**): Siim Kask (Elektrilevi) April 30 and May 18, 2018; his presentation from 10/2017 and general terms of contract for combined billing, Märt Jemmer (Imatra Elekter) June 1, 2018

The Netherlands (**NL**): Roel Kaljee (Energie-nederland) April 6 and May 15, 2018

Norway (**NO**): material from Ole Haugen (Energi Norge) of April 9 and May 4, 2018.

Sweden (**SE**): Catherine Lillo (Energiföretagen Sverige) April 5 and May 2, 2018; report R2017:05 from NRA; statement by Energiföretagen Sverige

Answers to questionnaire

Basic structure

1. *What is the basic arrangement / structure of (consumer and small business) billing in your country?*

DK: The set-up is the same for small and big customers. Retailer sends invoice for total expenditure. The invoice is generated by the retailer based on data in the national data hub. The centralized data hub was introduced to the electricity market in March 2013 by the Danish TSO, Energinet. Since April 2016, the data hub operates the so-called Supplier-centric Model.

EE: Default is two bills, if you have changed supplier. However, most customers of the largest DSO, Elektrilevi, get single bills. The present arrangement was introduced in 2017.

NL: Below 3x80 A: single bill from supplier; At 3x80 A or above: separate bills supplier/DSO

NO: Until 2016 about 70 % of all customers had one bill from their *local* supplier and grid company. Customers with another supplier had two bills – one from their local grid company and one from their chosen supplier. In 2016 the industry (Energi Norge) introduced a voluntary combined billing. Since that, about 1,5 million customers have (by April 2018) opted for this solution. Grid companies are obligated to offer this combined bill solution to all suppliers if they normally offer combined billing with the local supplier.

The industry has launched an initiative for a stepwise approach from the voluntary solution of today towards a model close to the one used in Denmark.

SE: Today: Normally separate bills.

Energy Inspectorate (NRA, known as "Ei") has issued a report "Ny modell för elmarknaden" (Ei R2017:05, June 2017) that among other things proposes compulsory single bills. No legal changes have so far been proposed. However, future development is expected to follow the main lines of the report, with several adjustments to be decided in a rather near future. Billing or market model issue is connected to introduction of datahub in Sweden. Ministry has had a public consultation. Strongest criticism came from the government data security ombudsman, on safety and data in the datahub. Also the defense force was critical. Bills as such were not a major issue in the consultation, except for the industry itself. E.g. branch organization Energiföretagen Sverige stated that majority of its members support the goals of the report, but many details need to be improved. The market situation has improved due to e.g. halved number of (higher priced) "tillsvidarepris" contracts, reduced role of bills due to digitalization, network codes requiring more contact between customer and DSO, as well as expected growing need of DSO system operation and local balancing. Any new arrangement should be designed to be flexible and easy to adjust in the future.

Adjustments in plans have been prepared since that. Election will be in September 2018, potential government change is not foreseen to change main proposals. Law proposals could be given earliest in March 2019.

The Swedish datahub project is at a very early preparatory phase. NRA has proposed launch date of January 1, 2021, but the delay so far is already at least one year.

The Swedish government has stronger than other countries pushed for a common Nordic retail market. A significant reason for political will to integration (and single bills as a part of that) derives from the earlier public criticism on price issues, especially of the three big companies and a wish to dilute market power by establishing a common market.¹

Future plans

2. *Do you have plans of new arrangements in this respect? Are those plans fixed or preliminary?*

DK: No.

EE: No. The present system is very new.

NL: No.

NO: Yes. Energi Norge has launched a step by step approach towards a new model (by 2019) to introduce single bills for all customers.

Three steps:

- (1) one bill, two contracts
- (2) supplier-oriented obligation to supply (i.e. no more DSO's obligation)
- (3) rational collecting of payments (or taxes).

The development will be closely related to establishment of the Norwegian data hub. No data of NRA or government response to these plans – as they would require legal measures. This approach could be implemented earliest at summer 2019 and as a voluntary solution for suppliers but obligated offer from grid companies.

If not otherwise stated, data below refer to the present situation with voluntary combined billing.

SE: Following data refers to the NRA proposal or debate thereafter, not the current situation.

Following questions apply to situations in which supplier invoices also DSO's grid fees from the end-user – independent whether that is the norm or an exception (described above) – Please only describe the future arrangements, if this is going to change! Please refer, if this is unclear, but indicate your guess how this will most probably be.

Legal basis

3. *Are those arrangements (under which suppliers invoice end-users instead of DSOs) based on law, rules from the regulator, industry recommendation, individual agreements between DSOs and suppliers, or something else?*

DK: By law the end-user only receives one bill where the supplier is the only point of contact.

EE: Background: Eesti Energia AS has traditionally been dominant incumbent supplier and its daughter company Elektrilevi provides distribution service for most (87,5 %) Estonian customers. Other suppliers claimed that Eesti Energia's ability to offer single bills within the group discriminated new-coming suppliers that had to provide separate bills for electricity. NRA accepted standard agreement² to be used by Elektrilevi and suppliers as a voluntary measure. Half of the number of

¹ This paragraph is a note from the editor, based on media observations

² https://www.elektrilevi.ee/-/doc/6305157/kliendile/Typtingimused_elektrimyjale_vorguteenuste_arvete_esitamiseks_tarbijale.pdf

suppliers have joined the agreement. Out of the 16 registered suppliers eight are providing single bills: five offer single bills for both business and residential customers, three for domestic households. Unlike Elektrilevi, smaller DSOs do not offer similar arrangement – competition issue has not been raised in their case. Out of the 650 000 Elektrilevi metering points, approximately 60 000 receive dual bills and 100 000 have not signed any supply contract but have remained with higher-priced universal service.³

NL: Legislation since 2013. After market opening, or 2004-2013, customer could choose between separate bills or one bill, but many (most) suppliers opted for offering only combined bills. NRA gives specific regulations on comprehensible and verifiable billing.

NO: Industry recommendation was published in 2014 (Energi Norge). However, all DSOs are obliged to accept the standard agreements under this scheme based on NRA prescription. Further suggested steps, e.g. changing the obligation to supply, require legislative measures.

SE: There would be legal basis for the arrangement. However it is still debated, whether the NRA should give additional, detailed regulations, e.g. on collaterals (when DSO may request, amount calculation...) and to which extent these would be agreement issues.

Optionality

4. Is there variation in the existing / planned system, can a supplier or end-user opt for one or two bills? Is the situation different for different customer classes, e.g. household consumers, businesses, large businesses?

DK: No. One bill is mandatory for all customers. However, big customers can choose to pay taxes and levies directly to the tax authority.

EE: Supplier may opt in or not: it may offer single bills to all customers, either domestic or business customers or none at all. Individual customers can only choose their supplier. However, some suppliers have introduced a separate daughter company so that e.g. daughter provides single bills and parent sends its customers only bills for energy, and Elektrilevi still delivers their grid fee bills. The importance of dual bill issue may be disputable, as online banking or direct debit is very usual.

NL: No choice for small customers. At 3x80 A or above: separate bills supplier/DSO

NO: Voluntary. Customers may opt between suppliers' offers with two or one bill.

SE: Obligatory for all customers except for big producers (i.e. not micro) and those customers that are themselves actors on the wholesale market.

Relation between DSO & end-user

5. Who is considered to be DSO's customer (when end-users are household consumers or small businesses): end-user or supplier?

DK: Supplier.

EE: End-user. Customer contacts DSO in other than billing-related grid issues (e.g. network contract signing, technical, new connection, additional services).

NL: DSOs think that end-users are or should be their customers. DSO takes care of the meter, but supplier validates data. Customer contacts DSO if customer wishes to enlarge connection. DSOs

³ <https://www.elektrilevi.ee/en/elektriturg> and <https://www.mkm.ee/en/objectives-activities/energy-sector/electricity-market>

want to assist customers in energy transition. Current law defines legal tasks of the DSO and its affiliate (commercial) “infrastructure company”. Future discussions are open in this respect.

NO: Today end-user. Also partially in the future plans by Energi Norge.

SE: Customers will have a contractual agreement with the DSO regarding technical issues (blackouts, blackout compensations, new connection, changes in connection and electricity quality). End-user might also contact the DSO, if in-depth data on e.g. grid tariff is needed. The contract between the end-user and the DSO would not include invoice conditions. Regarding invoice conditions (the economical flows) the DSO has a contract with the supplier, that is, the supplier has to pay an aggregate bill to the DSO for its’ customers in the grid area. So, regarding the bill and its conditions the customer has only a relation with the supplier.

6. a) Does an end-user have any contract with the DSO (also if contract is made using supplier as an intermediary/proxy)? In which issues? (one-time connecting to the network only or on continuous supply of grid services)
- b) Will information on DSO issues, e.g. planned outages, be sent to the end-user by the supplier or by the DSO?

DK: a) Yes - the end-user has a contract with the DSO. The DSO’s connection provisions are in place as soon as the end-user enters a contract with the supplier – so the contract is made using the supplier as intermediary. The “connection provisions” regulate the technical relation between end-user and DSO regarding e.g. quality of supply, connection conditions, grid work etc. The supplier is obliged to inform the end-user of its “connection provisions” with the DSO.

b) There is a web-based information platform for outages, where the supplier informs the end-users – this is not based on law, but an action made by the sector. The DSO is still obliged to inform end-users of planned outages by mail, posting in the “staircase” of apartments or alike.

In case of tariff changes above a certain level (10 percent, and minimum 40 DKK on a monthly basis per customer) information should go to the retailer at least 4 months in advance, to be taken into account in supplier’s information to end-user. The DSO notifies the supplier that will notify the end-user.

EE: a) Yes. The supplier can not change the end-user’s contract.

b) E.g. planned outages notifications, SMS for repairing unplanned outages, tariff changes are delivered by DSO.

NL: a) There are two separate contracts. Supplier is only billing the network costs, no further intermediary role for supplier.

b) DSO sends directly information on network and meter issues.

NO: a) Yes. In the proposed model there would be a contract between end-user and DSO combining connection agreement⁴ and technical elements of grid service agreement⁵

b) DSO.

SE: a) Yes. The end-user will have a contract with the DSO – for general households the supplier will send the agreement. However for big customers (high voltage) it is suggested that they first contact the DSO to make conditions ready before signing their contract with the supplier. The reason for this

⁴ Agreement made when connection is established

⁵ Agreement on continuous supply of grid services or “nettleiekontrakt”

is that bigger customers often have more complex tailor-made arrangements with the DSO.⁶

b) The responsibility of information on outages is on the DSO. No information of outages in the hub is planned at the moment. However, if data on unplanned or planned outages should be provided via datahub, it could be forwarded to end-users by the supplier.

DSO's receivables

7. Is the DSO entitled to receive a collateral from supplier to guarantee paying his receivables? Which rules apply to the collateral (size, type etc.)? Or are there some other arrangements to guarantee DSO's receivables?

DK: DSO bears the retailer risk. If retailer is deemed "risky" on (more or less) objective terms by a DSO, it must pay collateral.

EE: Yes. Elektrilevi invoices suppliers in advance for 1,1 months estimated payment. A supplier may also offer a bank guarantee in an amount of 1,1 months estimated payment (based on last year same month consumption, currently active customers and their tariffs). The check has been carried by Elektrilevi out on monthly basis to ensure supplier's creditability.

NL: No collateral between DSO and supplier. Legal rules apply to mandatory monthly payment of the network costs from supplier to DSO based on characteristics of connections supplied. If supplier defaults, DSO may be compensated value of maximum three months lost grid fees in her overall tariff base (NRA shall allow temporary price increase for that).

NO: *Present* situation: Contracts are between DSO and consumer / owner of the connected installation. There is a standard contract also between supplier and DSO. DSO demands a collateral from suppliers based on regulation and a standard made by the industry.

Proposed system: Contracts not decided yet, but the connection agreement is recommended to be revised and to be a contract between end-user and DSO. Suppliers contract with the customer will describe all commercial issues including grid tariffs and taxes.

SE: That is the intention, but several details of the future system are debated. Energiföretagen asked that DSO should be able to request collaterals if (and only if) a supplier is considered to have a high default risk. NRA could stipulate, in which situations DSO may call a collateral and how big. NRA did not propose any centralized collateral management system, as they thought that it would not be appropriate that either NRA or the TSO would run such a system. Energiföretagen support a centralized and obligatory collateral management.

NRA propose that terms concerning collateral request requirements and collateral size should be stipulated in contracts between DSO and supplier. Energiföretagen state that these should be regulated in a uniform way for whole the industry (by NRA or ministry).

It is also proposed by NRA that if collaterals do not cover the losses, the TSO (Svenska Kraftnät, SvK) would be liable for compensation and they would again be collected from all Swedish customers. SvK is not happy with this proposal, Energiföretagen support it.

End-user's payment

8. Is the supplier free to arrange end-user payment terms freely or are they stipulated somehow? (e.g. billing frequency, billing in advance etc.)

⁶ Energiföretagen has criticized the impact assessment for being made on another model than the one suggested – text in the NRA report refers to separate contracts but impact assessment to only one.

DK: Yes – the supplier can freely determine the terms of payment.

EE: In the contract between Elektrilevi and supplier it is stipulated that Elektrilevi sends network calculation rows in the beginning of each month (latest 12th day of month). Supplier can decide not to send out small invoices (e.g. less than 3 €). The rate of interest is fixed by Elektrilevi. Suppliers can have different payment terms for their customers. However, payment terms haven't been an argument for changing supplier.

NL: Free to arrange terms. But historically, monthly estimated payments (estimated yearly cost based on the average yearly consumption known divided by 12) and a yearly reconciliation bill is standard and part of the general conditions agreed with the consumer organizations.

NO: Based on the existing regulations for suppliers billing system.

SE: Billing frequency yes, but according to the Swedish government interpretation of the Energy Efficiency Directive (EED) the suppliers are not allowed to bill customers in advance (bills have to be based on supplied volumes). Energiföretagen requires that billing terms between DSOs and suppliers shall be cashflow neutral.

Payment from supplier to DSO

9. How often and under which terms supplier pays to the DSO? (e.g. monthly payment, due date 14 days after each month, etc.)

DK: DSO sends bill to retailer on day 7-10 (app.) after the end of month X, bill is due 14 days later, but never earlier than 25th day of month X+1.

EE: Billing period is one month. The prepayment bill is issued at the end of month for next month's amount (end customer is billed over the next month). The actual consumption and prepayment net calculation is invoiced at 12th day of the following month, latest. Both invoice's payment term is the 20th day of month.

NL: Hub (data exchange platform) algorithm calculates monthly DSO receivables from each supplier based on characteristics of connections supplied as registered in the DSO connection register. Hub storage includes: DSO connection register, measurement data validated by suppliers, contract end-date register. Hub administers business processes related to these data.

NO: Monthly, 20 days after receiving the bill from the DSO, including the billing information for all grid tariffs on the supplier's customers.

SE: Still debated. Energiföretagen Sverige support that payments should be cash flow neutral. This could mean that due date for supplier paying to DSO should be very soon after end-users' payment to the supplier. NRA will develop regulation for this.

10. Who issues bills or statements considering amount of payment between supplier and DSO? (E.g. DSO, supplier, data hub.)

DK: DSO issues bills to the supplier.

The DSO has no information about who is the retailer on a given metering point/address.

EE: DSO Elektrilevi (other DSOs are not involved in the arrangement, at least so far) sends the monthly bill on the 12th day of the following month latest.

NL: The DSO.

NO: DSO. The prescriptions for data exchange existing for the retail market is the basic rules for data exchange. System support for Ediel messages run by the TSO and the use of the EHF standard (Electronic trade format).

SE: They would be calculated by the DSO (in a later phase it may be done by the hub).

DSO billing data to the supplier

11. How does a supplier get the information in order to issue an end-user's bill as far as the DSO part is considered? (unit prices, pricing formulas, energy volumes, needed peak power etc.)

DK: The datahub contains info, retailers are using this info to form invoices for end-users. The DSO has no information about who is the retailer on a given metering point/address.

EE: DSO produces full DSO invoice lines for every end-user and sends them to the data hub (Andmeladu, run by the TSO Elering). Data hub sends them immediately directly to relevant suppliers, that simply add those lines to their bills together with other lines, and add the VAT.

NL: The network costs are capacity-based (main fuse size). For each connection the daily tariff is specified in the master data. This way the supplier knows how much the network costs are for each connection.

NO: *Now:* directly from the DSO. *Proposed:* from the data hub.

SE: Data hub from phase 2, before that DSO.

12. Do suppliers receive information of each end-user's or metering point's contribution to the total sum related to DSO's bill to the supplier? How and from whom? (e.g. DSO, data hub) Do suppliers use such information to produce each bill for the end-user? Or once a year or something else?

DK: All data is from the data hub.

EE: This information is transmitted from the DSO to the data hub and further to the supplier.

NL: Such data is not exchanged. DSO tariffs for small customers are very simple, based on main fuse size only. Third party (hub) calculates supplier's payment to the DSO and supplier knows the DSO fee for every customer based simply on fuses. DSO's connection register data is exchanged via hub.

NO: Yes. Now directly from the DSO.

SE: Data hub from version 2. DSO produces an aggregated bill of all customers volume in the grid area. However suppliers have access to each customers volumes in the hub.

Compensation for billing service

13. Is there any payments between DSO and supplier, other than simply supplier forwarding money to DSO according to DSO tariff and the possible collateral? Do suppliers receive payment or discount for the billing service they provide to DSOs?

DK: The supplier forwards money to the DSO regarding DSO tariffs, taxes and possible collateral. The supplier is not seen as a service provider for DSO billing or invoice services.

EE: No

NL: No.

NO: No.

SE: No (e.g. no compensation for end-user credit risk).

End-user credit risk

14. Who suffers finally the losses due to end-users' non-payment to the supplier? (e.g. supplier or DSO) Are end-users often liable to give collaterals to their suppliers?

DK: The supplier bears the full risk, including distribution and transmission grid fees, taxes and levies. Collateral is used either as a term in a new contract or a term for continued supply (in the case of a "bad payer".)

EE: Supplier (more precisely: the party that sends the bill to the end-user). End users do not give any collaterals.

NL: Supplier. Suppliers may ask a collateral (up to three months estimated payment) to a customer if they believe there is a higher chance to non-payment.

NO: Supplier. Supplier can cancel the end-user contract for consumers with 14 days' notice, and the supplier of last resort takes over the delivery. Supplier can ask for collaterals from industrial customers.

SE: Supplier. Liability depends on terms of contract (suppliers may ask for collaterals from customers that are considered to bear a greater risk).

Supplier's breach of payment

15. Is there a procedure for a supplier not paying to a DSO in due time, to exclude such a supplier from the service? How does that happen and under which conditions? How long does it take? Will that practically mean an end to such a supplier's activity - bankruptcy? What will happen to that supplier's customers?

DK: Yes, there is a procedure stipulated in the standard contract. Finally, if the supplier does not pay the DSO, the DSO can exclude the supplier from its DSO-area. If the supplier goes bankrupt end customers will be distributed to other retailers on a TSO list.

EE: DSO sends the monthly bill on the 12th day of the following month to the supplier. Due date is the 20th. If the bill is not paid then, the DSO issues a warning and in case of non-payment, the service will end by the end of the month (5 days to issue the warning and 5 days to pay). This means that DSO starts billing end-users directly. Non-payment to the DSO will not end up in excluding a supplier from the market as such. The pre-payment or collateral of 1,1 months should cover DSO's credit loss. To reduce supplier's possible losses, suppliers are entitled to order metering point disconnection in case of network fee debt. If customer changes supplier, the switch cannot be ordered before the debt is paid to previous supplier.

NL: Yes. DSO informs both supplier and NRA of the non-payment. If supplier does not pay in a short (5 working days or so) notice, NRA will revoke supplier's sales license. However, loss of NRA license has most often taken place due to BRP terminating contract because of non-payment. (BRPs act faster than DSOs.) After the license has been repealed, supplier has five working days to sell the customer base to another supplier. If that does not take place, the TSO will transfer all customers to all suppliers pro rata (i.e. based on their relevant market shares). This will be technically operated via the hub. Customers' old contracts and prices will be changed to each new supplier's standard

product for that kind of customer. Prices of standard products are reconsidered every six months. Standard contracts can be terminated at 30 days' notice. Normally assigned suppliers will send a new offer for their new customers. Active customers usually take one, two or three years fixed price contracts. One year is the most popular type.

NO: DSO will cancel the contract on combined billing. Ordinary business procedure for debt collection will follow, but the collateral from the supplier according to regulation and contract is expected to cover all the DSO's receivables. The customers from the supplier who can't fulfill his payment to the DSO will end up either as customers of the supplier of last resort or as customers without combined billing.

SE: Yes. DSO shall issue two warnings before cutting the service. Energiföretagen has criticized many aspects of rules proposed by the NRA, e.g. the very rapid supplier exclusion from the market (suppliers that have been warned the first time are not allowed to take new customers from any grid area – this is suggested to occur before the supplier has had a chance to appeal against the DSO claim), even if only one DSO's bill had not been paid. The supplier may appeal against the DSO claim to the NRA who ultimately determines if the supplier must pay or not.

16. Has there been cases in which supplier has defaulted (e.g. bankruptcies)? Have DSOs or end-users suffered economical losses?

DK: A very small retailer went bankrupt. End customers were distributed to other retailers on a TSO list. Dansk Energi has no information about DSO-losses, their losses will be handled within the regulation of DSOs. If the end user has paid a collateral to a supplier that goes bankrupt, the end customer can suffer a loss.

EE: No. The arrangement is very new.

NL: Yes. A couple of small new entrants (mostly because of BRP stops services or NRA challenges administrative organization). DSOs are covered by their grid users that are the ultimate payers.

NO: Not after opening of the market for combined billing through suppliers. However, some suppliers have defaulted earlier.

SE: This is only at planning phase.

DSO information and special payments

17. Who will notify end-users of changes in DSO tariffs?

DK: Supplier informs end-user on any price changes in the total price. However, supplier is not liable to display various components (DSO & TSO fees, PSO charges, taxes), so it is up to the supplier to decide on how to respond in the competitive situation to changes in components that the supplier pays to other parties.

EE: DSO

NL: No one. NRA communicates the new tariffs on their website and in a news item. They will be displayed on DSO website and in the suppliers' bill.

NO: Now: DSO, but also the supplier may transmit the information as a service

SE: Suppliers except in the case of big customers (high voltage) with often tailormade tariffs.

18. How compensations (if any) from DSO to end-users are dealt with?

DK: Compensations do not exist in Denmark (large black-outs depending on weather and DSO have been very unusual).

EE: They are part of network fee calculation and sent through data-hub with bill rows.

NL: If there is a grid-related outage of more than four hours, DSO shall compensate customer directly. DSO receives customer's bank account number from the hub.

NO: All money transactions between DSO and customers are handled by the suppliers except for special connection fees or investment contributions.

SE: Unclear. Outage compensation is a responsibility of the DSO. Supplier is proposed to take care of payments, but it is e.g. unclear how reclamations should be dealt with.

Special cases

19. Does a DSO have an option to decline a particular supplier's service? (in other cases than breaches of obligations, like not giving proper guarantees to the DSO, not paying in due time, etc.)

DK: No.

EE: No.

NL: See above, related to NRA repealing trade license.

NO: No.

SE: No.

Debate issues

20. Is there criticism of the current or planned future billing arrangement by some participants? (e.g. suppliers criticizing end-user losses, new entrants claiming too high collateral requirements, DSOs not happy with suppliers paying too slowly, etc.)

DK: There is no debate worth mentioning on electricity billing, neither publicly, nor within the industry. However, it might be noticed that the Danish, comparatively low supplier-switching (churn) rate is now even lower than before.

EE: Before this arrangement was introduced, individual choice for end-users was discussed. Now it is required that a supplier bills grid charges for all or none of its customers (either household consumers or business customers, or both). Some suppliers have introduced a separate daughter company so that e.g. daughter provides single bills and parent bills for energy only.

NL: Not fundamental. DSOs wish to reconsider their role vis-à-vis end-user in energy transition. Grid fees may be developed to become more granular based on peak consumption – e.g. number of peak load (kW) tiers instead of very limited number of main fuse sizes (1x25 A etc.). AMR roll-out will end at 2020, then maybe 90 % of metering points will be read remotely. If DSO will have installation problems or the customer forbids data connection to the meter (they have the right to refuse), these customers will remain to be profiled. Other customers' balance settlement will since 2020 be based on measured (quarter hourly) data.

NO: Small and new market actors trying to enter the market do not prefer to practice the combined billing because of system requirements and guarantees. They would prefer a voluntary combined billing solution.

Some smaller integrated companies are not happy with the obligations to offer a supplier the solution for combined billing. The reasons mentioned are system costs and extra work.

SE: Not yet relevant.

DSO costs in bills

21. Are energy, grid costs and taxes displayed in end-user bills?

DK: The supplier sending the bill does not have to break up the end-price in separate prices for energy, grid, taxes, transmission etc. If the customer asks for it the supplier is obliged to inform the customer about the separate parts of the end-price.

EE: Yes. The lay-out of the end-user bill is not regulated except an obligation to bring out network fee calculations separately and displaying DSO logo.

NL: Yes: separately energy costs, grid costs, electricity tax, RES support fee and VAT.

NO: Yes.

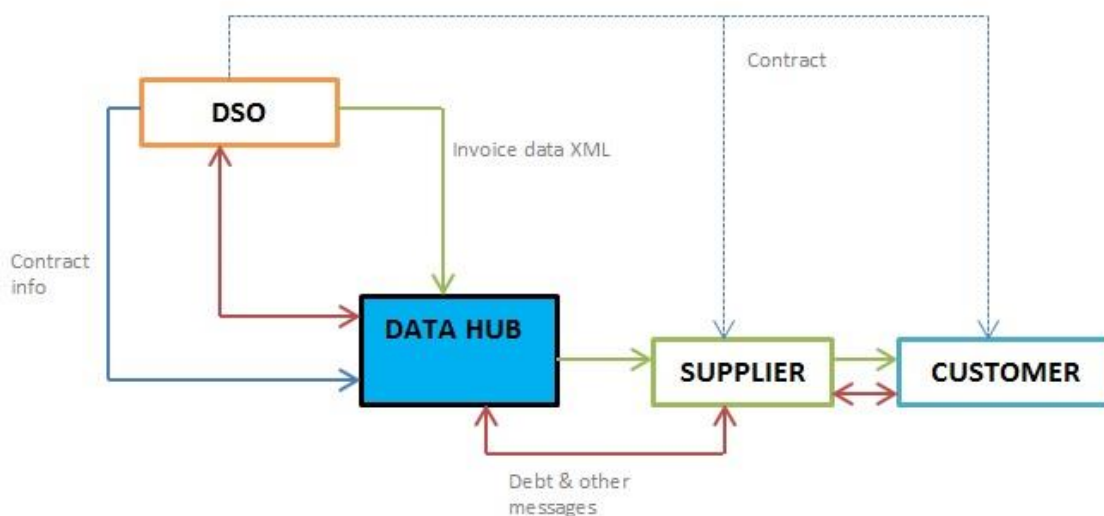
SE: Yes, that is the proposal. In the present system, the duty to collect electricity tax has been transferred from suppliers to DSOs from the beginning of 2018.

APPENDICES

1. Estonian single billing arrangement

Single invoice management

From 1.1.2017



1. DSO and Supplier contract. It is possible to choose 3 versions. All consumers, only business, only household. After that DSO marks contract information to data hub. With this contract all credit risk goes on supplier side, but it also gives opportunity to disconnect metering point in a case of debt.
2. DSO sends invoice data in XML messages and supplier will add it to theirs invoice. All the invoice meta data is held in DSO side. Data hub only sends messages forward.
3. Supplier can order disconnections via data hub
4. Supplier can ask questions regarding to invoicing and metering data directly via data hub.
5. All the energy taxes are paid by DSO
6. It has given to market higher customer satisfaction and higher switching rate.

2. Billing example: Netherlands (prepared for Commission Smart Grids Task Force, EG1 WG) DRAFT

2.3 Billing example: Netherlands

In the Netherlands there are only two billing models possible. Larger commercial customers get one bill from the supplier and one bill from the DSO. Household customers get only one bill from the supplier. In the Netherlands the supplier centric model is implemented in 2013. The supplier handles all the customer questions about the bill.

For household customers the bill received from the supplier includes the network charges. The network charges are based on a capacity tariff. This makes it easier for the supplier to calculate the network cost. The network costs is simply the day tariff multiplied by the days the supplier is active on a connection.

The DSO specifies at the end of the month for each supplier how much the supplier must pay for all his customers in the specific network area. There are strict rules when these cost must be paid by the supplier to the DSO. The supplier collects the network costs including the Value Added Taxes (VAT) and pays these costs to the DSO. The supplier bears the risk of collecting all the network costs. There is no compensation for the supplier for this. The supplier also collects the energy taxes and pay these taxes to the tax authorities.

In the Netherlands the DSO's created a datahub including all connections. Switching is handled by the datahub. The cost the suppliers must pay to the DSO is based on the data in the datahub. At each connection the daily tariff is specified in the master data. This way the supplier knows how much the network charges are for each connection.

A supplier must be registered at the datahub before he can execute a switch. At the registration the legal entity must be known. When the supplier doesn't pay the network charges to the DSO the DSO is allowed to go to court and ask for the bankruptcy of the supplier. A customer has a contract with the supplier and with the DSO. Since the supplier is the main contact point for the customer the supplier handles also the network contract. The DSO has no contact details anymore of the customers.

The customer can choose different billing models. The majority of the customer choose a yearly fixed tariff per kWh. The tariff can change at the beginning of a new calendar year. It is also possible to have a fixed tariff for two or three years. This gives more certainty to the customers.

Normally the yearly consumption of the customer is estimated and divided by 12. This results in a fixed amount of money the customer has to pay per month. After a year the customer provides his meter reading value if the customer still has a traditional meter or the meter reading is remotely read if the customer has a smart meter. The meter reading value is used to calculate the yearly consumption. If the real consumption is lower than the estimated consumption the customer gets some money back. If the customer consumed more than estimated the customer has to pay for the extra consumption. Most customers like to pay a fixed amount per month for their electricity costs.

Recently it is also possible to choose a time of use tariff this requires a smart meter. With this product the tariff can change per hour (or per 15 minutes).

Bill example Netherlands:

Normally the customer chooses the same supplier for gas and for electricity. Therefore the bill usually contains also gas and electricity.

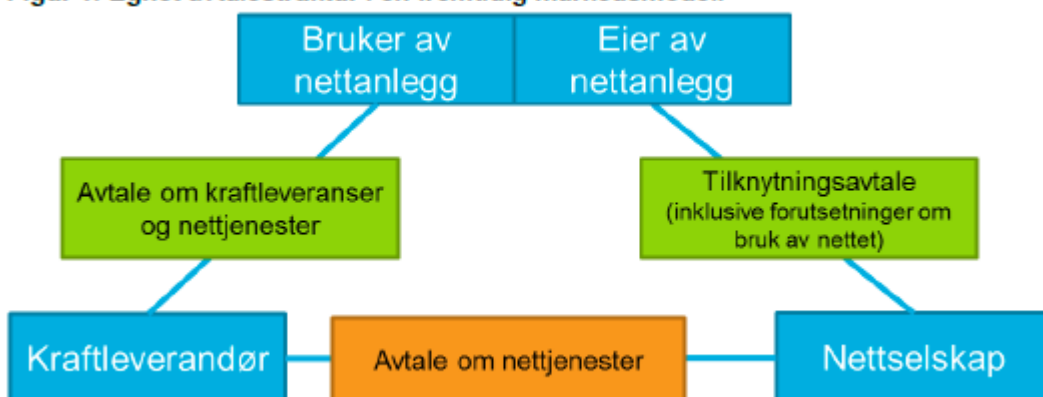
	Dutch electricity bill components :
A	<p>Information related to the customer account as well as contact details of the supplier and the DSO such as :</p> <ul style="list-style-type: none"> ● Customer reference number, identification of the account holder and billing address of the customer; ● Supplier details such as contact details and consumer support hotline ; ● Distributor emergency phone number.
B	<p>Current bill information such as :</p> <ul style="list-style-type: none"> ● Billing identification code, period and supply address; ● Identification code for the supply point ; ● Total amount for electricity and gas supply costs, taxes and network charges based on the real consumption; ● Amount already paid by a monthly fee based on an estimation. ● Difference between already paid amount based on estimation and amount based on real consumption.
D	<p>Price breakdown :</p> <ul style="list-style-type: none"> ● 1. Meter readings and calculated consumption of electricity and gas. For gas the amount of consumed m3 is corrected based on the energy value of the gas that is consumed;

	<ul style="list-style-type: none"> • 2. Cost of electricity based on a tariff per kWh for gas based on m3 and both for electricity and gas a fixed amount per day. • 3. Taxes. An tariff per consumed electricity or gas and an extra amount for promoting renewables. For electricity a base consumption is subtracted. • 4. Network charges a fixed amount per day based on installed capacity. • 5. Already paid monthly fee and newly calculated monthly fee. • 6. Total amount of value added taxes.
D	Personal usage : comparison of the customer's current electricity consumption with consumption for the same period in the previous year in graphic form identifying self-reading from meter-reading and estimated consumption.
E	Information on price of electricity evolution.
F	Contribution of each energy source to the overall fuel mix of the supplier.
G	Information on the customer's rights. Website adress and phone number from wich information may be obtained on available energy efficiency improvement measures.

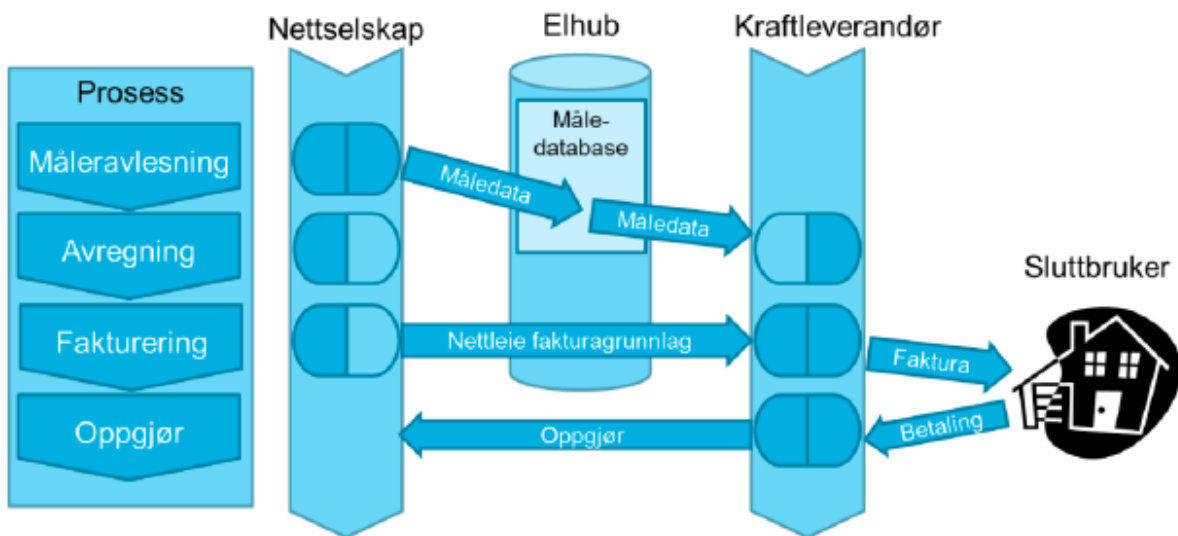
3. Norwegian plans

From Energi Norge position paper "Fremtidig markedsmodell for sluttbrukermarkedet", version 06-14 (final?)

Figur 1: Egnede avtalestruktur i en fremtidig markedsmodell



Figur 2: Engros-modellen



Tabell 2 gir eksempler på hvilke type henvendelser som skal besvares av henholdsvis kraftleverandører og nettselskap.

Besvares av Kraftleverandør	Nettselskapets ansvar, men skal i tillegg gjøres tilgjengelig for kraftleverandør	Besvares av Nettselskap
<ul style="list-style-type: none"> Målerdata Fakturering Produkter Tariffer Leverandørbytter Flytting/innflytting/utflytting Avtale om kraftleveranser og netjtjenester 	<ul style="list-style-type: none"> Planlagte avbrudd Utfall Rasjonering 	<ul style="list-style-type: none"> Nettanlegg/måler Ulykker Leveringssikkerhet Leveringskvalitet Avbrudds-kompensasjon Tilknytningsavtale Utkobling

Tabell 2: Fordeling av ansvar knyttet til informasjonsplikt ved kundefhendelser

Figur 4: Markedsrelevant informasjonsflyt i en fremtidig markedsmodell

