Ministry of Environment of Denmark
Environmental Protection Agency

Guidelines for reporting in line with Paris model for a climate- and energy-neutral water sector

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Contents

1. Background and purpose

Water and waste water utility companies subject to the Danish Water Sector Act (vandsektorloven) are being urged to report their ambitions in relation to energy consumption, energy production, CO2 emissions, nitrous oxide emissions and methane emissions in the lead-up to 2030 (and preferably for 2035 too) to the Danish Environmental Protection Agency.

The aim of these guidelines is to assist utility companies with reporting data and information that can be used to establish a 'Paris model' for an energy- and climate-neutral water sector.

The purpose of this reporting is to get the water companies to increase their focus on energy and climate performance so that the water sector is in a position to contribute to national climate-related targets and ambitions to an even greater extent. It is also anticipated that it will be possible to incorporate the future data about the companies' actual climate input into the Danish Environmental Protection Agency climate-related performance benchmarking. The expectation is that the companies' energy and climate ambitions will be reported at fixed intervals, e.g. every third or every fifth year.

The sector and the government also believe that if the Danish water sector can prove that it is possible to become energy- and climate-neutral, this will help to motivate the water sectors in other countries to become energy- and climate-neutral themselves. If the water sector around the world can become energy- and climate-neutral, this will have a major impact on the global emissions of greenhouse gases.

It must be emphasized here that the questionnaire constitutes an initial attempt at creating a Paris model for the water sector and that there may be questions that are difficult to answer and may not even be formulated in totally the right way. As such, we ask water and waste water utility companies to direct any questions or comments to points of contact at the Danish Environmental Protection Agency, listed at the end of section 2, so that the response is as correct as it possibly can be, and so that the Paris model can be improved on an ongoing basis. If it proves to be very difficult to come up with any suggestions for future development, another option (of course) may be to just 'extend' the existing data later in time. After all, it is not individual utility company climate and energy perspectives that are interesting, but the result for the sector as a whole.

It must be highlighted here that the reported data may be published, e.g. if an access request is made.

2. The Paris model and the data involved in brief

The ‘Climate plan for a green waste sector and circular economy’ political agreement of 16 June 2020 (https://www.regeringen.dk/media/9591/aftaletekst.pdf [in Danish]) establishes that a “Paris model for a energy- and climate-neutral water sector” must be implemented in order to achieve energy and climate neutrality in the Danish water sector.

To support this energy and climate neutrality target, *“A ‘Paris model for an energy- and climate-neutral water sector’ must be implemented. Under the model, the Danish Environmental Protection Agency will urge all drinking water and waste water companies subject to the Danish Water Sector Act to report their ambitions in relation to energy consumption, energy production, CO2 emissions, nitrous oxide emissions and methane emissions in the lead-up to 2030 to the Danish Environmental Protection Agency.”*

The Paris model must, as much as possible, use existing data about current performance, to enable the water companies, as a starting point, to report their ambitions regarding performance for the next 15 years, divided into five-year intervals, calculated with data and parameters that are already in use today. The focus here is on data that counts towards the national energy and climate gas emissions accounts at present.

Via this performance benchmarking, the Danish Environmental Protection Agency is already collecting data about the energy performance of water companies today. At the same time, the Danish Environmental Protection Agency will be collecting the data basis via PULS, the NOVANA programme will be collecting data about the water companies’ removal and emissions of nutrients, and Aarhus University will be collecting data about other greenhouse gas emissions.

Data about the water companies’ climate footprint from consumption of chemicals and construction, plant and transport activity are not covered by the model, as the view was taken that the figures belong elsewhere in the national climate accounts, and that it would be too laborious administratively for the companies to calculate this.

There is no expectation of precision for the parameters in question in the anticipated development reported by the companies, nor is the reporting binding for the companies. The reporting of anticipated development will be the best option based on current knowledge and in light of the anticipated development in the water volume charged and changes in technologies. Another crucial prerequisite is that the anticipated development be calculated **on the basis that the current supply area does not change.**

In the case of the quality of the companies’ reports, it may be crucial to take into account the anticipated development of other decisive factors that may impact the reported data, such as changes in future demand as a result of population growth, changes to industry needs, plans for expansion, mergers, rainfall etc.

For more details regarding population growth, please refer to Statistics Denmark’s population forecast for the individual municipalities and the data in time series ‘FRKM120’ at

https://www.statistikbanken.dk/10022

What is in the questionnaire?
Each company has been sent a spreadsheet, in which they are to enter data relevant to the company regarding level of ambition/expected performance etc.

As an introduction, drinking water companies and waste water companies are both asked to provide basic details on the 'Basic Information' tab by selecting their own company from a dropdown menu and filling out contact information and any comments relevant to the Paris model. All the companies are also asked to answer questions concerning the company's strategic energy and climate targets, with answers entered on the 'Strategy' tab (section 3 of this guide).

The next section of the questionnaire consists of a series of specific tables containing data parameters for drinking water companies and for waste water companies, where they are asked to state their level of ambition/expected performance for each parameter – wherever possible.

On the *drinking water page* (see section 4), there are two sets of reporting parameters, located on the 'Drinking water input' tab:

- Energy consumption (see table 1 in section 4.1)
- Afforestation (see table 2 in section 4.2)

On the questionnaire's *waste water page* (see section 5), the reporting parameters, which are located on the 'Waste water input' tab, are as follows:

Waste water in sewers (transport):

- Energy consumption (see table 3 in section 5.1)

(Methane emissions in the sewer system are not included because DCE/Aarhus University, against the background of data from Aalborg University, deemed the emissions from the Danish sewer system not to be of significance.)

Waste water at treatment plants:

- Energy consumption (see table 4 in section 5.1)
- Nitrous oxide emissions from treatment process (see table 5 in section 5.2)
- Methane emissions from biogas tank leakage (see table 6 in section 5.3)
- Nitrogen removed (nitrous oxide in nature avoided; see table 7 in section 5.4)

Waste water in nature:

- Emission of nitrogen - nitrous oxide emissions (see table 8 in section 5.5)
- Septic tanks - methane emissions (see table 9 in section 5.6)

Last of all, drinking water and waste water companies (cf. section 6) both have the option to describe any other CO2 reduction activities that are not contained in the above data set:

- Other CO2 reduction activities (see table 10 in section 6)

The most recent data for current performance (typical for 2019) is pre-filled on the spreadsheet for the areas in which the Danish Environmental Protection Agency already holds data, and in which the company has reported data. The quantity of data already available may vary from company to company, inter alia, because not all data will be relevant to all companies. In the spreadsheet used to report data, the potentially pre-filled fields are highlighted in yellow. If the

pre-filled data contains errors, we ask the companies to contact us or to provide us with the correct figures in the comments.

Codes (formulae) have been added to the spreadsheet so that the companies, having input their data, automatically receive a calculation of their overall energy and climate footprint, which can be found on the 'Overall carbon footprint' tab. The spreadsheet will be locked so that you cannot change the pre-filled data or formulae by accident. The formulae – and therefore also the results – may change with time as a result of updates to the emission factors. The three tabs with data files merely contain background data and are not relevant to the company's reporting process.

Should you encounter any problems, or if you have any questions relating to the input of data, please contact the Danish Environmental Protection Agency:

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3. Strategy - energy and climate

In this category, the water company must state whether they have a strategy for company performance in relation to energy and climate.

The target of energy and climate neutrality in the water sector exists partly due to the desire for there to be more of a strategic focus on energy and climate neutrality in the water companies. For this reason, questions are asked about the company's work on strategies in this area.

Questions about climate neutrality
Does the company have a target date set for climate neutrality?

A: Yes – we have a target written into our strategy
B: Yes – we have an internal target/plan/expectation
C: No – but we are doing preliminary work to prepare a future target
D: No – we haven't made any decision on this yet
E: No – we've decided not to pursue the work any further

If you answered 'Yes' regarding setting a target for climate neutrality for the company – which year?

If you answered 'Yes' and if there is a target for climate neutrality for the entire company/holding company/Group – which year?

Question about energy neutrality
Does the company have a target date set for energy neutrality?

A: Yes – we have a target written into our strategy
B: Yes – we have an internal target/plan/expectation
C: No – but we are doing preliminary work to prepare a future target
D: No – we haven't made any decision on this yet
E: No – we've decided not to pursue the work any further

If you answered 'Yes' regarding setting a target for energy neutrality for the company – which year?

If you answered 'Yes' and if there is a target for energy neutrality for the entire company/holding company/Group – which year?

If you answered 'Yes' regarding a target for energy neutrality for the entire company/holding company/Group – what progress has been made working towards the target?

4. Data relating to drinking water

4.1 Energy parameters

In the field of energy, reporting is done in line with the principles of the 'Guidance on reporting performance benchmarking', Guide 44, issued by the Danish Environmental Protection Agency in May 2020 [in Danish]:
https://www2.mst.dk/Udgiv/publikationer/2020/05/978-87-7038-185-7.pdf

The base year, 2019, has been pre-filled in the categories of electricity, total heat and water volume charged. The figures come from the 2019 Performance Benchmarking.

The calculation reflects the Performance benchmarking, but also expands it by dividing the heat consumption into three sources: district heating, oil and natural gas. The effect on climate is very different for each of the three sources.

The water company is asked to calculate and input how much of their heat is currently either district heating, heat produced with oil or heat produced with natural gas, even if data has been pre-filled for 'total heat' in 2019, under 'Heat/district heating purchased'. If figures are not input for the three separate heat sources, it is assumed that it is all district heating and will therefore be multiplied by the emission factor for district heating. In the case of 2019, i.e. no modification of 'Heat/district heating purchased' possible, only 'heat produced with oil' and 'heat produced with natural gas' are input, if these are relevant, with these figures then deducted from the district heating in the CO2 calculation.

The water companies are required to calculate their level of ambition in the form of expected performance on each of the specified parameters in 2020, 2025, 2030 and 2035. The water companies are also asked to input anticipated developments in the water volume charged, as this will provide information about energy efficiency and provide a basis on which to assess the other parameters.

The carbon footprint for the energy consumption (cf. part B, table 1) is obtained by multiplying the energy data for heat and electricity by the respective CO2 emission factors (EF) in the formulae.

TABLE 1: Energy consumption, drinking water

	kWh						m3
Year	Electricity purchased [A]	Heat/district heating purchased [B]	Heat produced with oil [C]	Heat produced with natural gas [D]	Electricity sold [E]	Heat sold [F]	Water volume charged
2019	-	-			-	-	-
	Ambitions / expected performance:						
2020							
2025							
2030							
2035							

	Carbon footprint calculation for drinking water company, kg		
Year	Carbon footprint for electricity [G]	Carbon footprint for heat [H] Note 1)	Overall carbon footprint
Formula:	= (A-E)*EF(electricity)	= (B-F) *EF(district heating) +C*EF(Oil) +D*EF(natural gas)	= G + H
2019			
2020			
2025			
2030			
2035			

Note 1) In 2019, [C] and [D] were deducted from [B] , and [F] from [E] to avoid counting twice

Emission factors:

EF(Electricity), kg/kWh	EF(district heating), kg/kWh	EF(Oil), kg/kWh ('rounded' to 0.27 equating to 75 kg/GJ due to several possible oil types)	EF(Natural gas), kg/kWh
0.118	0.068	0.270	0.205
0.111	0.059	0.270	0.205
0.050	0.039	0.270	0.205
0.012	0.032	0.270	0.205
0.012	0.032	0.270	0.205

4.2 Afforestation in connection with groundwater protection

To protect groundwater, one solution is converting to another type of agriculture – e.g. forestry. Afforestation is also a way of absorbing and binding CO2, which has a positive effect on the climate.

Although the amount of forest that can be grown is decided by local authorities, the forest is financed via water tariff revenues, which means that the positive impact can justifiably be attributed to the water sector.

In the table below, the water company is asked to state how much forest it has helped to finance up to the present date in connection with groundwater protection. This includes stating the proportion financed by the water company itself if several water companies or other stakeholders are involved.

The water company is also asked to come up with its best estimate of how much other land they plan to convert in the coming years using finance from water tariffs, in connection with groundwater protection.
For each hectare of forest that is planted, a carbon footprint of 5.8 tonnes CO2e is calculated for the first ten years and 8.5 tonnes CO2e for each year thereafter, giving a calculation of the carbon footprint. All forest planted before 2010 is attributed 8.5 tonnes CO2e per year. Forest planted in the period 2010–2015 is attributed 5.8 tonnes CO2e per year until 2025 and 8.5 CO2e per year thereafter. Forest planted in the period 2015-2020 is attributed 5.8 tonnes CO2e per year until 2030 and 8.5 CO2e per year thereafter. Forest planted/expected to be planted after 2020 is attributed 5.8 tonnes CO2e per year.

TABLE 2: Afforestation (Part A – input possible in the blue-coloured cells only)

Year	Hectares of forest before 2010 [A]	Hectares of forest 2010–2014 [B]	Hectares of forest 2015–2019 [C]	Hectares of forest 2020–2024 [D]	Hectares of forest 2025–2029 [E]	Hectares of forest 2030–2034 [F]
2019						
	Ambitions / expected performance:					
2020						
2025						
2030						
2035						

PART B – calculation of carbon footprint

Year	Tonnes						TOTAL (kg)
2019							
2020							
2025							
2030							
2035							

5. Data relating to waste water

5.1 Energy parameters

In the field of energy, reporting is done in line with the principles of the 'Guidance on reporting performance benchmarking', Guide 44, issued by the Danish Environmental Protection Agency in May 2020 [in Danish]: https://www2.mst.dk/Udgiv/publikationer/2020/05/978-87-7038-185-7.pdf

The base year, 2019, has been pre-filled in the categories of electricity, total heat, external biomass supplied and water volume charged. The figures come from the Performance Benchmarking.

The calculation reflects the Performance benchmarking, but also expands it by dividing the heat consumption into three sources: district heating, oil and natural gas. The effect on climate is very different for each of the three sources.
A 'natural/town gas' category has also been added for energy sold.

The water company is asked to calculate and enter how much of their heat is currently district heating, heat produced with oil and heat produced with natural gas, as well as how much electricity, heat and natural/town gas is sold, even if data has been pre-filled for total heat under 'heat/district heating purchased' for 2019 and figures including any natural/town gas have been pre-filled for 2019 under 'heat sold'.

In the case of 2019, i.e. no modification of 'Heat/district heating purchased' and 'Heat sold' possible, only 'heat produced with oil', 'heat produced with natural gas' and 'natural/town gas sold' are entered, if these are relevant, with these figures then deducted from 'heat purchased', 'district heating' and 'natural/town gas sold' respectively in the CO2 calculation. If figures are not entered for the three separate heat sources, it is assumed that it is all district heating and will therefore be multiplied by the emission factor for district heating. The same applies to 'heat sold', if no figures are entered for 'natural/town gas sold'.

The water companies are asked to calculate their expected performance on each of the specified parameters in 2020, 2025, 2030 and 2035. Please note that the energy consumption is reported for transport (Table 3) and treatment (Table 4) respectively. The treatment section makes a distinction between 'received' and 'externally supplied' biomass. As additional biomass only is received at a small number of companies and accounts for a very small proportion of energy, only externally supplied biomass is included in the calculation of the treatment part.

The water companies are also asked to input anticipated developments in the water volume charged for transport and for treatment respectively, as this will provide information about energy efficiency and provide a basis on which to assess the other parameters.

The carbon footprint for the energy consumption (cf. part B, tables 3 & 4) is obtained by multiplying the energy data for heat and electricity – and during treatment of any biomass supplied externally – by the respective CO2 emission factors (EF) in the formulae.

TABLE 3: Energy consumption, waste water in the sewer system (Transport)

	kWh							m3
Year	**Electricity purchased [A]**	**Heat/district heating purchased [B]**	**Heat produced with oil [C]**	**Heat produced with natural gas [D]**	**Electricity sold [E]**	**Heat sold [F]**	**Natural/town gas sold [G]**	**Water volume charged in the sewer system's catchment area**
2019								
	Ambitions / expected performance:							
2020								
2025								
2030								
2035								

	Carbon footprint calculation for transport, kg		
Year	**Carbon footprint for electricity [J]**	**Carbon footprint for heat [K]**	**Total carbon footprint**
Formula:	= (A-E)*EF(electricity)	= B*EF(district heating) + C*EF(oil) + D*EF(natural gas) - F*EF(district heating) - G*EF(natural gas/town gas) Note 1)	= J + K
2019			
2020			
2025			
2030			
2035			

Note 1) In 2019, [C] and [D] were deducted from [B] , and [G] from [F] to avoid counting twice

Note 1) In 2019, [C] and [D] were deducted from [B] , and [G] from [F] to avoid double-counting.

Emission factors:

EF(Electricity), kg/kWh	EF(district heating), kg/kWh	EF(Oil), kg/kWh ('rounded' to 0.27 equating to 75 kg/GJ due to several possible oil types)	EF(Natural gas), kg/kWh
0.118	0.068	0.270	0.205
0.111	0.059	0.270	0.205
0.050	0.039	0.270	0.205
0.012	0.032	0.270	0.205
0.012	0.032	0.270	0.205

TABLE 4: Energy consumption, waste water at treatment plants

	kWh								m3
Year	**Electricity purchased [A]**	**Heat/district heating purchased [B]**	**Heat produced with oil [C]**	**Heat produced with natural gas [D]**	**Electricity sold [E]**	**Heat sold [F]**	**Gas sold (natural/town gas) [G]**	**Biomass supplied to external energy producer [H]**	**Water volume charged in the treatment plant's catchment area**
2019									
	Ambitions / expected performance:								
2020									
2025									
2030									
2035									

Carbon footprint calculation for treatment, kg				
Year	**Carbon footprint for electricity [J]**	**Carbon footprint for heat [K]**	**Carbon footprint for external biomass [L]**	**Total carbon footprint**
Formula	= (A— E) * EF (electricity)	= B * EF (district heating) + C * EF (oil) + D * EF (natural gas) – F * EF (district heating) - G * EF (natural/town gas) Note 1)	= H * EF (district heating)	= J + K – L
2019				
2020				
2025				
2030				
2035				

5.2 Emission of nitrous oxide from process (waste water)

Nitrous oxide is formed during biological treatment of waste water at treatment plants.

The table below calculates a theoretical footprint based on an average emission factor from DCE (EFN2O=0.32%=0.0032), whereby the waste water company has specified N for the inlet to the treatment plant.
Although the emission factor is expected to be adjusted upwards by a factor of around 2 ½ in the near future, an emission factor of 0.32% will be used until further notice. If specific EFN2O measurements exist or emerge, these can be reported together with the future emission percentages anticipated. The reported values will be included in the formula instead of the official standard value.

In their calculation of future footprints, the waste water company must take into consideration the political decision made to introduce, from 2025, limits for nitrous oxide emissions from treatment plants that treat waste water that is the equivalent of at least 30,000 people's effluent (PE). These limit values are to ensure that the total effluent from waste water treatment drops by 50 percent compared to today. It can be very helpful to use table 10, section 6 about other CO2-limiting activities to outline completed or planned reduction measures, but the carbon footprint should only included once.

In the table below, please specify the expected figures for volume and kg N for inlet and outlet for 2020, 2025, 2030 and 2035. This involves coming up with a suggestion for future volumes and changes in N-concentrations. Please note that N is not used in 'outlet' until tables 7 and 8.

If the company has its own measurements or is planning measurements of nitrous oxide emissions, you can enter the emission factor calculated and expected for the respective years. If external biomass is received for the plant, it is helpful to report the quantity of this in the final column.

TABLE 5: Nitrous oxide emission from treatment process

Year	Inlet water volume, m3	N in the inlet to treatment plant, kg [X1]	Outlet water volume, m3	N in the outlet from treatment plant, kg [X2]	For any emission factor calculated based on company's own measurements and any emission factors expected see Note 2)	Standard EF_{N2O} (expected to be updated soon)	Carbon footprint (Kg CO_2equ.)*	Any external biomass received at the plant, kg
Formula							= X1*EF_{N2O}*(44/28)*298	
2019						0.0032		
	Ambitions / expected performance:							
2020						0.0032		
2025						0.0032		
2030						0.0032		
2035						0.0032		

5.3 Emissions from biogas plants (waste water)

Waste water companies producing biogas are asked to calculate their biogas leakage. As standard, the waste water company's biogas tank is calculated to have a leakage of 1.3% from the volume of methane produced at plants with anaerobic sludge treatment. This is consistent with the figures that DCE/Aarhus University uses when calculating the national emissions.

The methane content of biogas (Z1) is calculated as a function of the produced biogas in Normal cubic metres: (Z Nm3 biogas*0.65*0.72 kg CH4/Nm3), which involves multiplication by the proportion of methane first of all (0.65), then conversion from m3 to kg. This is then multiplied by the leakage percentage and conversion factor for CO2.

The waste water company is asked to specify the produced biogas in Normal cubic metres (Nm3) for this calculation.

TABLE 6: Methane emissions from leakage at biogas plants

Year	Produced biogas, Nm3 [Z]	Methane content of biogas, kg [Z1]	Carbon footprint (based on standard measures of leakage), kg	Any measurement by company itself of leakage percentage, % [a] Note 3)	Carbon footprint (based on company's own measurement), kg
Formula	Z	=Z *0.65*0.72	= Z1 * 0.013*25		=Z1*a *25
2019					
	Ambitions / expected performance:				
2020					
2025					
2030					
2035					

5.4 Removal of nitrogen

Emission of nitrogen into nature causes nitrous oxide to form. Nitrous oxide is a very potent greenhouse gas. Removal of nitrogen from waste water by treatment plants prevents nitrous oxide forming in nature.

The attached spreadsheet contains a calculation of how much nitrogen the waste water company removed from the waste water in 2019 in total. The figure was obtained from the data for inlet and outlet that we recorded in the database PULS for the waste water companies in 2019.

The waste water companies have a positive effect on climate because they remove nitrogen from the waste water, which means that no CO2 is formed from the nitrogen that is removed, when the waste water is emitted.

Data from the waste water company relevant to the calculation of the carbon footprint from removal of nitrogen is filled out in table 5 and used again in the calculation in table 7. As such, table 7 does not need to be filled out.

In the calculation of the carbon footprint, the overall volume of nitrogen is multiplied by the standard emission calculated by IPCC – and which DCE/Aarhus University uses when calculating the national emissions figures. Please note that the carbon footprint calculations in table 7 are not included in the sum total of the company's carbon footprint, but rather are transferred to a separate column in the spreadsheet.

TABLE 7: Nitrogen removed – nitrous oxide in nature prevented

Year	N in the inlet to treatment plant, kg [X1]	N in the outlet from treatment plant, kg [X2]	Carbon footprint in kg
	Entered in table 5	Entered in table 5	=(X1-X2) *0.005*(44/28)*298
2019			
	Ambitions / expected performance:		
2020			
2025			
2030			
2035			

5.5 Emission of nitrogen (waste water)

Emission of nitrogen into nature causes nitrous oxide to form. Nitrous oxide is a very potent greenhouse gas. Below you will find data for the 2019 waste water company emissions we recorded in the database PULS.

The waste water company is asked to state whether they have any ambitions to reduce nitrogen emissions in the coming years. Reporting of this data means that the future volumes will be assessed for the outlet, waste water overflow and rain water effluent, as well as the changes in the N concentrations of these. As such, the expected volume must be filled out in the spreadsheet, as must the N quantity for outlet, waste water overflow and rain water effluent in the years in question.
In the calculation of the carbon footprint, the overall volume of nitrogen is multiplied by the standard emission calculated by IPCC – and which DCE/Aarhus University uses when calculating the national emissions figures. Please note that a treatment plant 'bypass' must be included in the calculation of the waste water overflow.

TABLE 8: Emission of nitrogen – nitrous oxide emission

Year	N in the outlet from treatment plant, kg [X1]	Waste water overflow, m3	N from waste water overflow, kg [X2]	Rain water overflow, m3	N from rain water outlet, kg [X3]	N to nature in total, kg [Y]	Carbon footprint, kg
Formula	X1		X2		X3	Y=X1+X2+X3	=y *0.005*(44/28)*298
2019							
	Ambitions / expected performance:						
2020							
2025							
2030							
2035							

5.6 Emissions from septic tanks (waste water)

Around 30 percent of the waste water sector's total carbon footprint in the national statistics comes from properties with septic tanks and is therefore not attributable to the waste water companies. Conversely, the carbon footprint decreases when properties are sewered. This decrease can be credited to the waste water companies.

We therefore wish to know how many properties the waste water company expects to be sewered in the time periods below. The carbon footprint is calculated based on the calculation of a standard organic matter effluent and the standard emission of methane from properties with septic tanks derived from this. The average emission of methane per property, in kg, is calculated as follows: 0.047 (kg CH4/kg COD) * 0.1488 (kg COD/PE/day) * 2.16 (PE/property) * 365 days = 5.51 kg methane per year. If you multiply by the conversion factor from CH4 to CO2, which is 25, the average standard emission of methane calculated per property in kg CO2 equivalents per year will be as follows: 5.51 * 25 = 137.84.

TABLE 9: Septic tanks – methane emission

Year	Number of properties that are sewered [U]	Avg. emission of methane calculated per property, kg [X5]	Reduction in methane emitted, kg, [V]	Carbon footprint, kg
Formula		=0.047*0.1488*2.16*365 = 5.51	=U * 5.51	= 25*V = 137.84*U
	Ambitions / expected performance:			
2020		5.51	-	-
2025		5.51	-	-
2030		5.51	-	-
2035		5.51	-	-

6. Other CO2-limiting activities – (water parking via wetlands, 'Carbon Capture' etc.)

In this category, there is the option to list other activities with proven effects on CO2, which the water company has plans to set up, and for which a carbon footprint has been calculated. This applies, for example, to further new reduction measures in relation to nitrous oxide emissions from treatment plants, cf. table 4 in section 5.2, and may otherwise be wetlands in connection with tariff-financed climate adjustment, technologies for carbon storage etc. Another example might be collaboration with external partners on installation of heat pumps, in which case it can be useful to provide information about the installations, including the thermal heat output in MW.

Please note that carbon footprints already included in previous tables do not have to be included in the right-hand column.

TABLE 10: Other CO2-limiting activities

Year	Activity	Any carbon footprint not included in above tables, kg
2020		
2025		
2030		
2035		

Activities in this category require a formal decision to have been made beforehand and will preferably be documented via the attachment of documentation or brochures, e.g. in the form of the relevant sections from the strategy or business plan. The Ministry of Environment of Denmark does not hold any systematic data about these additional areas.

Guidelines for reporting in line with Paris model for a climate- and energy-neutral water sector

Water and waste water utility companies subject to the Danish Water Sector Act (vandsektorloven) are being urged to report their ambitions in relation to energy con-sumption, energy production, CO2 emissions, nitrous oxide emissions and methane emissions in the lead-up to 2030 (and preferably for 2035 too) to the Danish Envi-ronmental Protection Agency.

The aim of these guidelines is to assist utility companies with reporting data and information that can be used to establish a 'Paris model' for an energy- and cli-mate-neutral water sector.

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