



Simplified monitoring plans

Rasmus Zink Sørensen
rzs@ens.dk

Motivation

- Operators of small installations cannot be expected to understand the MRR
- Operators of small installations do not understand the concepts of source streams and tiers
- By using a standard, operators can comply without understanding the legal text
- Used by 308 of 375 installations

Basis

- Fuel purchase measured according to Danish metrological requirements
- Fuel purchase documented by invoices
- Measure annual change in fuel stock
- National standard calorific and emission factors

- Danish metrological requirements = tier 2
- Standard factors = tier 2b
- Change in stock of solid fuel = no tier

Standard 1

- Combustion of fuels
- Gaseous and liquid fuels
- Emissions lower than 500,000 tonnes if unreasonable cost of highest tier – otherwise max 50,000 tonnes
- Used by 252 installations

Standard 2

- Combustion of fuels
- Gaseous, liquid and solid fuels
- Emissions lower than 25,000 tonnes

- Used by 38 installations

Standard 3

- Production of ceramic products
- Gaseous, liquid and solid fuels
- Process emissions
- Emissions lower than 25,000 tonnes

- Used by 18 installations

Identification

Simplified template for monitoring plan

Group 2

Installations with energy production using of natural gas/town gas, fuel oil, gas oil/diesel oil, petrol, LPG, coal, petro coke, coke and bio fuels – without process emissions

In "guidance on CO₂-allowances", located at the Danish Energy Authority's web page www.ens.dk/CO2kvoter, you will find a step-by-step guide on how to make a monitoring plan. Simplified template 2 can be used by installations which use solid fuels in addition to liquid and/or gaseous fuels

1. Identification of installation

The monitoring scheme encompasses the following installation:

Name of installation	
Installation number (P-nr.)	
Address of installation	
Operator	

The more detailed description of the installation and its units appears in the CO₂-emission permit.

Conditions

The installation fulfils the following¹:

- All CO₂-emissions from the installation, stem from the production of energy from stationary units, with a combined nominal capacity of no less than 20 MW
- CO₂ emissions from production processes are not included
- The CO₂ emissions included in the ETS only stem from combustion of one or more of the following fuels: *natural gas/city gas, fuel oil, gas oil/diesels oil, petrol, LPG, coal, petro coke and coke*
- *Bio fuels* may be used. The used *bio fuel* must contain a minimum of 97 % of non fossil organic material.
- The fuel oil, gas oil/ diesel oil, petrol, LPG, coal, petro coke and coke must be invoiced in Denmark after weighing or metering by equipment, that meets current Danish legislation².
- Natural gas and city gas is measured by the gas companies metres.
- The combined amount of fuel extracted for other purposes, must be equivalent to a CO₂ emission of no more than 1000 tons pr. year or alternatively below 2 % of the total CO₂ emission.
- The total emissions are less than 25.000 tons CO₂ pr. year.

¹ An in-depth description of the demands the installation must fulfil to use the standard solution can be found in the "guidance on CO₂ allowances".

² The operator cannot use the simplified template if one of the before mentioned fuels are delivered by ship.

Quality control etc.

- From 2013 onwards procedures must be described as required by MRR

$$C = P + (S - E) - O$$

where,

Calculation of emissions

- Standard formula

- $C = P + (S - E) - O$

C = Annual consumption of fuel,

P = Annual purchase of fuel. The amount of fuel purchased must be stated in accordance and on the basis of purchase invoices concerning fuels delivered during the calendar year,

S = Fuel stock in the installation at the start of the year measured in tons or m³. This must be stated by level metering or by a similar method. The stated fuel stock at the beginning of the year, must equal the stated fuel stock as it was at the end of the previous year.

E = Fuel stock as stated by the end of the year, as measured by the use of level metering or a similar method,

O = Fuel used for other purposes not included in the installation's emission permit.

- CO₂-emission = fuel consumption covered by CO₂ allowances • calorific value • emission factor • oxidation factor

Standard factors

- Operators must use standard values for calorific and emission factors
- Danish CA publish standard factors every year mid January
- Factors are the latest available for national UNFCCC reporting

Select relevant fuels

4. 4. Fuel consumption

The following fuel/fuels are used in the installation (mark with X):

<input type="checkbox"/>	Natural gas/city gas	<input type="checkbox"/>	Petro coke
<input type="checkbox"/>	Fuel oil	<input type="checkbox"/>	coke
<input type="checkbox"/>	Gas oil/diesel oil	<input type="checkbox"/>	Bio gas
<input type="checkbox"/>	Petrol	<input type="checkbox"/>	Solid bio fuel
<input type="checkbox"/>	LPG	<input type="checkbox"/>	Liquid bio fuel
<input type="checkbox"/>	Coal	<input type="checkbox"/>	

On the following pages a description of the methodology for each of the used fuels can be found (for each of the marked fuels a separate page must be used).

Specification for each fuel

Fuel oil

The amount of fuel must be stated in tons.

Assessment of fuel stock at the beginning and end of the year will be conducted as follows:

Is purchased fuel used for other activities not covered by the ETS?

No **Yes**

If yes, please clarify how this amount will be stated:

Comments:

Signature

5. Signature

Version number of the monitoring plan:

Date

Name and signature of a person legally responsible for the installation