

Do you know what you burn?

Online sampling solutions for biomass industry



Prometec

Energy
Efficiency
Solutions

AUTOMATED BIOMASS SAMPLING





Something suspicious in a boiler

Biomass quality controlling is globally unworkable. The industry simply does not know what quality of biomass is burned in power plants. The methods of quality assessment are dangerous and outdated. In addition, manual sampling is a major occupational safety risk.

A GLOBAL PROBLEM

The main error in the moisture result is caused by incorrect and unrepresentative sampling.

Poor occupational safety

Disagreement between seller and buyer of biomass





THE PROBLEM

The biggest problem in solid biofuel **quality control** process is SAMPLING*

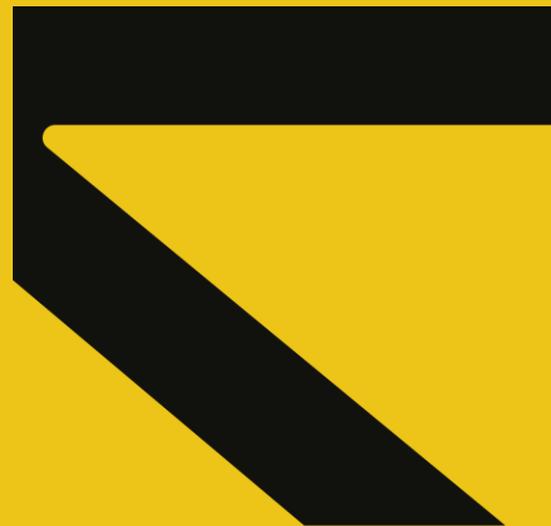
80%

of error caused by sampling executed poorly

15% of error caused by sample handling
5% of error is caused by measurement

*Järvinen, 2012, VTT-R-01322-12

*Stömberg&Svärd, 2012, Bränslehandboken, p. 32



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36h → 6min

- Sampling • Handling • Result • Data -

TIME SAVINGS IN QUALITY CONTROL

Traditional biomass quality control involves collecting samples, handling them, measuring and drying them, and inputting the results into a database. This process typically takes about 36 hours to complete. However, Prometec's automated sampler can do all of this in just 6 minutes, providing substantial time savings for our clients.

Prometec Q-Solution

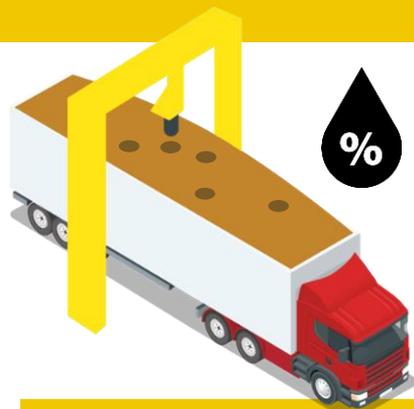


1. LOAD REGISTRATION

The incoming fuel load is weighed and reported to the Q-Data system.

BENEFITS:

- Integrations with existing systems
- Information in cloud
- Data is entered only once



2. SAMPLING

Automated sampling with Q-Robot. Volume measurement, calculation of the moisture estimate and data transfer to Q-Data.

BENEFITS :

- Always representative samples
- Improved occupational safety
- Fuel quality information BEFORE unloading



3. MEASURING

Automated forming of the laboratory sample. The quality data is transferred to Q-Data.

BENEFITS :

- Online measurement of the moisture before unloading
- Laboratory work will be reduced
- Data in one place



4. OPTIMISING

Fuel quality data into Q-Data online. This allows to control fuel logistics and optimize the combustion process.

BENEFITS :

- Integration with the process control system
- Fuel unloading to the correct unloading pits
- Improved boiler efficiency

REPRESENTATIVE SAMPLES AUTOMATICALLY

Automated sampler takes representative samples directly from the trucks before unloading. Also, sampler measures volume and moisture online.

- ✓ Fully automated sampling
- ✓ Operates by the standards EN ISO 18135 and EN ISO 14780
- ✓ Truck –specific **representative** samples from the each arriving truck / wagon before unloading
- ✓ Sampling sequence about 6 minutes with 4 samples



IMPROVED OCCUPATIONAL SAFETY

Manual sampling can be hazardous, especially in outdoor environments or in the presence of dust or other contaminants. Prometec's automated sampler eliminates the need for manual sampling, thereby improving occupational safety.



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Prøveudtagning	
XRY219-WRV272	
XRY219-WOY180	
DM92495-AK7048	
334-gff137	
33-ds5563	
16695-CK4261	
by85988-dj3557	
dp9269-by6866	
ck51706-jd7993	
dh56147-b66702	
ch38963-ch4685	
cu92666-nr9251	
cf52092-dh8310	
dh56147-8t7001	
aw81706-ct1632	
br14783-cv4576	
cz73087-aj9578	
CT24380-CIO7564	
DN88118-EA5382	
DJ32260-CR1110	
DJ59266-886702	
CG67223-DH4128	



Our Team

We have improved quality controlling and energy efficiency in over 20 power plants since 2012. Delivered Robot systems (8) are sampling over 60 000 truck loads and 12 000 train wagons per year.

Our clients are exceptional satisfied. Our customers' willingness to recommend us is 9,4 (NPS).

Quality controlling in energy sector since 2012

- Finnish technology and specialist organization
- Established in 2012. 11 employees
- Turnover 2022 2,2 milj.€
- Now, business in Finland, Sweden, Denmark and Estonia
- Sales agents in six countries
- We have versatile working experience and expertise in different sectors at energy business



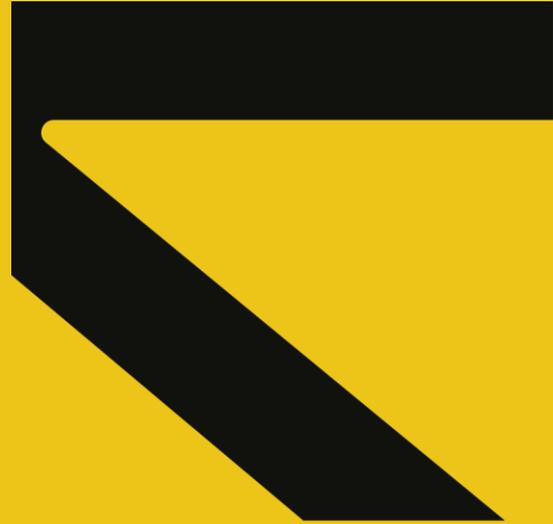
Executive Summary

5 important points about sampling

Prometec offers the most comprehensive automatized sampling and measuring solutions for the power plants in the world.

1. Automated sampling before unloading according to EN ISO 18135
2. Moisture and volume information before unloading
3. Randomly taken samples from each load and train wagon
4. Same sampler for granular / crushed materials
5. Improved working safety and fast sampling





Prometec

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