

SPECIFICATION, TENDERING, SELECTION, AFTER SALES SUPPORT

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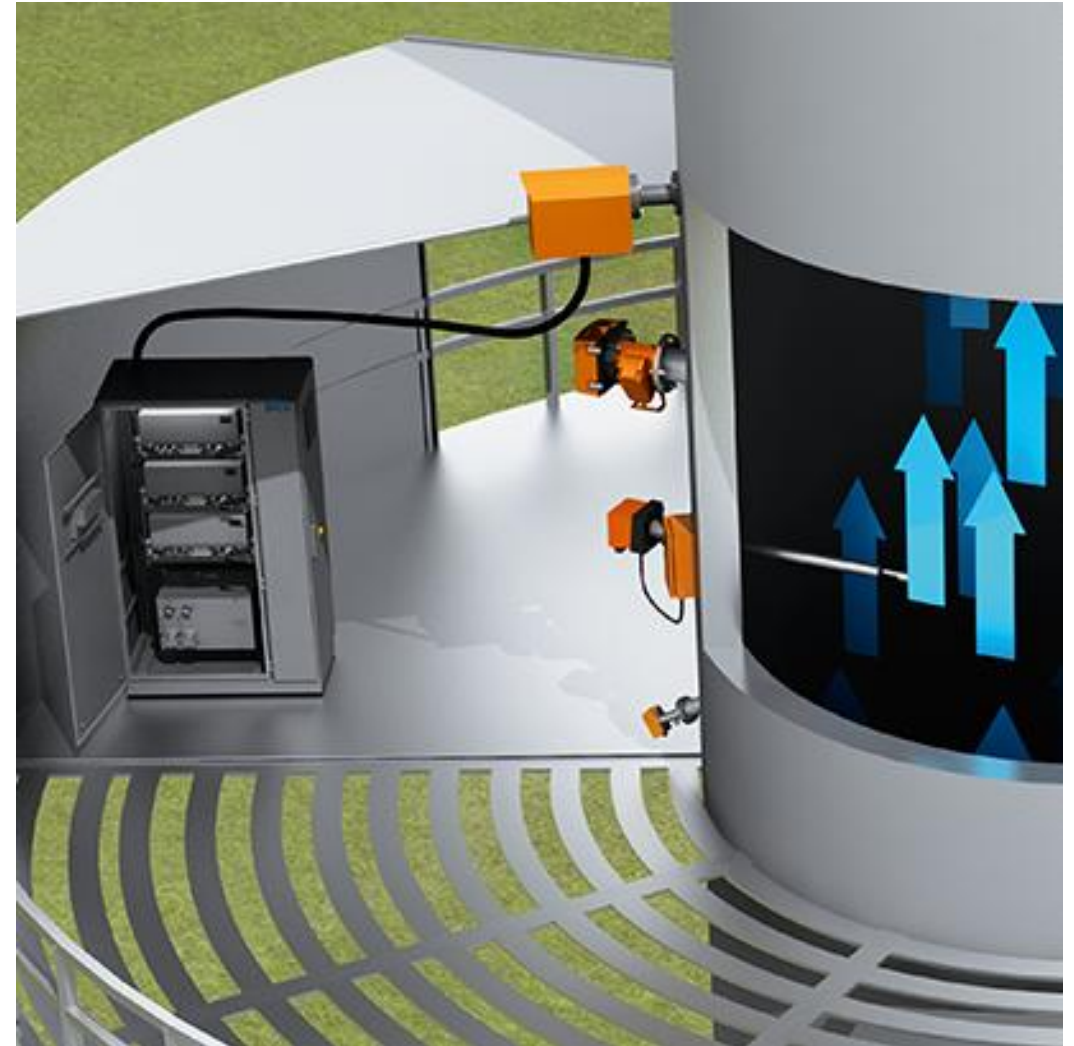


INTERNATIONAL CENTRE FOR
SUSTAINABLE CARBON



CHALLENGES

- High uptime
- Less cost of ownership
- Skilled resource
- Accessibility
- Meet the Regulatory requirements





MEASURING COMPONENTS

- Determine the Process Parameters as per the regulation and the measuring ranges

Component	ELV	Measuring Range
SO ₂	100mg/Nm ³	300mg/Nm ³
Oxides of Nitrogen	100mg/Nm ³	300mg/Nm ³
Oxygen	-	21%
TGM	30mcg/Nm ³	100mcg/Nm ³
Particulate Matter	30mg/Nm ³	90mg/Nm ³
Moisture		40%

TPPs (units) to be installed from 1 st January, 2017**	
Particulate Matter	30 mg/Nm ³
Sulphur Dioxide (SO ₂)	100 mg/Nm ³
Oxides of Nitrogen (NO _x)	100 mg/Nm ³
Mercury (Hg)	0.03 mg/Nm ³



COMPLIANCE TO STANDARDS

- Understanding the differences between (EN 15267)
- All relevant installation procedures

9.1 Recommended Instrumentation/Methodology for Monitoring

- The USEPA TUV & MCERTS certified analysers *for emissions* alone are recognised for use as CEMS. Any alteration invites invalidation of the certificate.
- All indigenous and foreign Manufacturers of analysers/ instruments for real time monitoring of industrial emissions shall obtain certificate for their system within six months after the Indian certification system is in place.
- The analysers/ instruments will not be considered for installation; in case their manufacturer fails to obtain the required certification from the Indian

Table 8: Difference between the two QA systems followed in European Union & USA

	Selection of CEM	Installation	Stability before calibration	Valid calibration	Ongoing instrumental stability	Ongoing calibration stability
EU	QAL1 (EN15267 parts 1 to 3) with appropriate certification range	EN15259	QAL3	Functional test and QAL2	QAL3 plus annual linearity	Functional test and annual surveillance tests (AST)
USA	None but legal onus on the operator to provide valid data	Field Performance Test	7-day drift test	Correlation tests over 3 days	Zero and Span plus, quarterly linearity test	Annual correlation test and Relative Accuracy Test Audits (RATA) for gases and Relative Response Assessment (RRA) for particulate



OPERATIONAL CONDITIONS

- Verify the operational conditions
- Not just present, include future worst-case situations
 - Wet FGD
 - Dry FGD
 - De-NO_x
 - Any additional components





TECHNOLOGY SELECTION

- Check the preconditions to operate and skilled resources for the chosen technology
- Evaluate if the technology is installed
- Evaluate the worst-case scenarios and i
- Installation requirements.





AFTER SALES SERVICE

Typical Services

- Supervision of Installation and Commissioning
- Data connectivity
- Remote Calibration function

- Preventive Maintenance
- On call Maintenance
- Repairs
- Annual Subscription for Data Connectivity

Typical Services

- **Selection and suitability of CEMS to your application**
- Supervision of Installation and Commissioning
- **Installation Validation**
- Data connectivity
- Remote Calibration function
- Preventive Maintenance
- On call Maintenance
- Repairs
- Annual Subscription for Data Connectivity



SUMMARY

- Each step in the selection and specification is very important
- There is no “one size fits all” Solution for all installations. Every site is different based on the operations, accessibility, etc
- Choose partners not vendors
- Access the capability
- Do not decide on the initial project cost, include your quality life also

Q & A

