Example for Performance Test Report and Form for Small Scal CHP Gasifier Unit (Usually only one supplier for entire equipment)

This form serves as guideline and is an example. It must be adapted for specific equipment and test requirements. (Refer to delivery boundaries in Fig 3)

Object, Terms and Scope

Type of Equipment:
Reference to Contract:

Supplier: Contact person:	Owner: Contact person:	Location of equipment: Operator: Contact person:

Test Runs Planned:

Test Run	Duration Performance	Performed and Assisted by (List names)	Date and Comments
1. X hour Test 1)	X hour nonstop full load Proof of Performance	Owner: Supplier: Operator: Mandated Tester: Observer:	
2. Y day Test 1)	Y x 24 hour nonstop full load Proof of Performance	Owner: Supplier: Operator: Mandated Tester: 2) Observer:	
3. Start-up Procedure Test	Normal cold to full load operation Duration to be tested	Owner: Supplier: Operator: Mandated Tester: Observer:	
4. Shut down Procedure Test	Normal full load to shut down, drive out to cold empty equipment, ready for inspection and maintenance Duration to be tested	Owner: Supplier: Operator: Mandated Tester: Observer:	

Test 1 + 2 REPORT / Summary of Performance

	Input output Specification Measurement Point		Specification in Contract	Result Test 1 24 h	Result Test 2 7 days	Rerun Test ……		Fulfilled Yes/no
	Fuel type, Fuel quality,	kg/h						
	Electric power production	kWh						
	Thermal power production	kWh						
	Ash and dust production	Kg/h						
		dm3/h						
	Waste water	dm3/h						
	sludge production	dm3/h						
	Exhaust gas 2)	quality						
	Producer gas 3)	quality						
	Noise level 4)	dBa						
	Consumables Specifications							
	Intern electric power cons.	kWh						
	Water	dm3/h						
	Steam	m3/h						
	Additives							
	Operating specifications							
	Manpower control system	h						
	Manpower fuel preparation	h						
	Manpower maintenance	h						
	References to data listings							
				- Load diagram - Power output - …….	- Load diagram - Power output - …….			

Test 3 + 4 REPORT Start-up and Shut-down Procedure

	Measurement Point		COLD START	HOT NORMAL RUN	TIME REQUIERMENT	SHUT-DOWN	COLD FOR INSPECTION	TIME REQUIERMENT
	Electric power production	kWh	0%	100%		100%	0%	
	Thermal power production	kWh	0%	100%		100%	0%	
	Fuels used (type, quantity)	kg						

	Output Specification		START	END	TOTAL	START	END	TOTAL
	Ash and dust production	Kg/h						
		dm3/h						
	Waste water	dm3/h						
	sludge production	dm3/h						
	Exhaust gas 1)	quality						
	Producer Gas flared 2)	m3						
	Consumables Specifications							
	Intern electric power cons.	kWh						
	Water	dm3/h						
	Steam	m3/h						
	Additives to be named							
	Operating specifications							
	Manpower control system	h						
	Manpower fuel	h						
	Manpower maintenance	h						
	References to data listings							

Remarks:

1) Test modality:
   Duration and numbers of test runs to be defined by the contracting parties and should be included in the contract

2) Mandated Tester:
   Independent third party to asses performance tests and conform the fulfilled PTP.
   Carrying out measurements for producer gas and exhaust gas quality requires the use of a quite comprehensive (and expensive) set of instruments. if this service is needed, it shall be named in the contract, as well all costs for third party during PTP shall be shown, also who will be addressed to pay.

3) Exhaust gas:
   Quality to include bulk composition, temperature and any regulated emissions e.g. dust, CO, HCs, NOx

4) Producer gas:
   If the one supplier takes responsibility for gasifier, filters, the gas engine etcetera and warranties for minimal running hour for the whole delivered equipment as such, this measurement point can be left to the supplier.
   If there are two suppliers or more for a CHP gasifier unit, so it is necessary to focus very closely to that point. Especially if there is different supplier for gasifier, filter, gas engine, then accurate producer gas measurement is advised. The gas quality may be measured in several points, e.g. upstream and downstream of a cleaning device to validate sub-supplier warranties. The measurement shall include: bulk composition, temperature, relevant contaminates such as e.g. tar, ammonia, HCl etc.

5) Noise level:
   As specified in contract for individual components and for aggregated unit. Refer local and national requirements.

Conclusion of Test Runs

	Remarks References	Performance not achieved	Performance achieved
1. X hour Test Proof of Performance	- Load diagram - Power output - ……		
2. Y day Test Proof of Performance	- Load diagram - Power output - ……		
3. Start-up Procedure Test Duration	As base for yearly production		
4. Shut down Procedure Test Duration	As base for yearly production		
5. Full load hours/Years Calculations	Achievable Full Load hours/y = 8800h – expected maintenance time – number of necessary start-up and shut-downs x (Time from test 3+4) – 15 days x 24h spare time (such as holidays)		

Date and Signatures

Supplier:	Owner:	Observer: