

RRMQ -Responsible resource management practices' questionnaire for remanufacturing SMEs

Criterion	Code	Description of Responsible Resource Management Practice (RRMP)	Y/N*
Water consumption level (WCL)	WCL5	water consumption is measured and controlled at work stations; water is reused (or closed loop) where possible	
	WCL4	water consumption is measured and controlled at work stations; water is not reused	
	WCL3	water usage is monitored ad hoc at output level/process level; water is not reused	
	WCL2	water usage is monitored at hoc only at cost level (the invoices are reviewed); water is not reused	
	WCL1	water usage is not monitored ; water is not reused	
Waste water (WW)	WW5	sludge generation is monitored at work stations; water is reused where possible	
	WW4	sludge generation is monitored at work stations; water is not reused	
	WW3	sludge generation is monitored at process output; water is not reused	
	WW2	sludge generation is monitored at cost level (reviewing invoices); water is not reused	
	WW1	sludge generation is not monitored ; water is not reused	
GHG Emissions level (GEL)	GEL5	GHG emissions are measured and monitored on regular basis; action are taken to systematically lower the emissions	
	GEL4	GHG emissions are measured and monitored on regular basis; ad hoc actions are taken to lower the emissions	
	GEL3	GHG emissions are measured and monitored more often than it is required by the minimal legal regulations	
	GEL2	GHG emissions are measured and monitored; only if required by law; legal requirements are fully implemented	
	GEL1	GHG emissions are not measured and monitored; min. legal requirements are implemented	
Energy consumption level (ECL)	ECL1	Energy consumption is regularly measured and monitored; energy management system is implemented (e.g. ISO 50001)	
	ECL2	Energy consumption is regularly measured and monitored; no energy management system is implemented; systematic actions are taken to lower energy consumption	
	ECL3	Energy consumption is regularly measured and monitored at facility level; ad hoc actions are taken to lower energy consumption	
	ECL4	Energy consumption is monitored at cost level (reviewing energy invoices)	
	ECL5	Energy consumption is not monitored; only min. legal requirements are implemented	
Energy saving level (ESL)	ESL5	Energy saving actions are taken ; renewable energy is used as main source of energy	
	ESL4	Energy saving actions are taken; renewable energy are used as complementary source of energy	
	ESL3	Energy saving actions are taken ; the company does not use renewable energy sources	
	ESL2	Some energy saving actions are taken ; company is not aware of the renewable energy alternatives	
	ESL1	Energy saving actions are taken only if required by legal regulations (e.g. changings bulbs for more energy-efficient ones)	
Primary materials	MCL5	Quantity of primary materials at work station are monitored and measured; systematically actions are taken to lower primary materials consumption	

* Please kindly mark only one answer ("YES" - "Y") for each of the 10 provided criteria.

consumption level (MCL)	MCL4	Quantity of primary materials at work stations are monitored and measured; ad hoc actions are taken to lower primary materials consumption	
	MCL3	Quantity of primary materials are monitored and measured at process level; ad hoc actions are taken to lower primary materials consumption	
	MCL2	Quantity of primary materials are monitored at cost level (reviewing invoices); ad hoc actions are taken to lower primary materials consumption	
	MCL1	Quantity of primary materials are sometimes monitored at cost level (reviewing invoices); no additional actions are taken to lower primary materials consumption	
Material recovery level (MRL)	MRL5	Materials recovery rate is measured and monitored at each stage of process/each work station ; systematically actions are taken to increase materials recovery above industry standards (e.g. APRA)	
	MRL4	Materials recovery rate is measured and monitored at each stage of process/each work station; ad hoc actions are taken to increase materials recovery above industry standards (e.g. APRA)	
	MRL3	Materials recovery rate is monitored at end of process; actions are taken to keep materials recovery at industry standards (e.g. APRA)	
	MRL2	Materials recovery rate is monitored at end of process ; actions are taken if materials recovery internal goal is not met	
	MRL1	Materials recovery rate is monitored at end of process ; additional actions are not taken	
Waste generation level (WGL)	WGL5	Quantity of waste generated at work station are monitored and measured; systematically actions are taken to lower waste	
	WGL4	Quantity of waste generated at work stations are monitored and measured; ad hoc actions are taken to lower waste	
	WGL3	Quantity of waste generated are monitored and measured at process level; ad hoc actions are taken to lower waste	
	WGL2	Quantity of waste generated are monitored at cost level (reviewing invoices);ad hoc actions are taken to lower waste	
	WGL1	Quantity of waste generated are ad hoc monitored at cost level (reviewing invoices); no actions are taken to lower waste	
Recycling level (RL)	RL5	Materials/scrap is sent for recycling; sorting procedures are implemented at each work station; actions are taken to systematically improve internal recycling goals	
	RL4	Materials/scrap is sent for recycling; sorting procedures are implemented at each work station; ad hoc actions are taken improve internal recycling goals	
	RL3	Materials/scrap is sent for recycling ; actions are taken to meet internal recycling goals	
	RL2	Materials/scrap is sent for recycling to meet legal requirements; additional internal goals are defined	
	RL1	Materials/scrap is sent for recycling to meet legal requirements; no additional actions are taken	
Reused/recycled material consumption (RMC)	RMC1	Recycled materials usage is not monitored; no additional actions are taken	
	RMC2	Recycled materials are used to meet legal requirements; no additional internal goals are defined	
	RMC3	Recycled materials are used where possible; internal goals for secondary materials /parts are defined	
	RMC4	Recycled materials are used where possible; ad hoc actions are taken to improve internal goal to	
	RMC5	Recycled materials are used where possible systematically actions are taken improve internal goal	