

9. Propose an approach and timetable for providing a complete list of emission points from the carbon capture plant, impact assessment, the proposed emissions controls and achieved abatement levels. The application details the main emissions (new PCC stack), and makes reference to numerous other (typically passive) emission points, such as tank and silo breather vents. Normally we would need the full list before duly making an application. Full information must be provided for principal (active) emissions points e.g. for the residual kiln/LCP waste gas emissions, bypass, and CO2 venting. Given the understandable design finalization/uncertainty for this project, it is acceptable for duly making for passive vents etc. to identify principal sources and emissions controls strategy, with a full and final list of these secondary emissions points and abatement to be provided during determination.

For the existing kiln waste gas stack, it is understood that this will be eventually decommissioned. Confirm whether, for this variation it should be removed, or retained with existing ELVs as a potential bypass stack prior to completion of proposed carbon capture modification works.

The current list of emission points for the carbon capture plant are detailed in the table below. There may be additional release points required once detailed design is completed. Impact assessment, proposed emission controls and abatement will be assessed, and a response submitted by 31st March 2025.

For the source points listed below an estimate of composition and release volume will be made to determine if abatement is required. With appropriate abatement installed, any residual emissions will be negligible of particulates and chemicals.

With regards to the existing kiln stack, this should be retained with the existing ELVs for this variation for operation without the carbon capture plant.

Padeswood CCS Emission points				
	Name of source (emission point)	Source type	Frequency emissions are released	Material released
1	PSVs on Boiler Feed Water Vessel	Vent	Intermittent	Steam
2	Deaerator Vent	Vent	Continuous	Steam
3	HP steam header	Vent	Intermittent	Steam
4	LP steam header	Vent	Intermittent	Steam
5	PSVs on Boiler Blowdown Vessel	Vent	Intermittent	Steam
6	PSVs on Condensate Return Drum	Vent	Intermittent	Steam
7	PSVs on Wet Air Receiver	Vent	Intermittent	Air
8	PSVs on Instrument Air Receiver	Vent	Intermittent	Air
9	Nitrogen Generation Package	Vent	Intermittent	Nitrogen
10	Fire Water Tank	Vent	Intermittent	Air

11	Demineralised Water Tank	Vent	Intermittent	Air
12	Raw Water Buffer Tank	Vent	Intermittent	Air
13	Filter Vent (WWTP)	Vent	Intermittent	Air
14	WWTP Chemical Storage Tanks	Vent	Intermittent	Air
15	Flue Gas Condensate Tank	Vent	Intermittent	Air
16	RO Reject Tank	Vent	Intermittent	Air
17	Cooling Tower Exhaust	Vent	Intermittent	Air saturated with water
18	CCP Effluent Storage Tank	Vent	Intermittent	Air
19	HTF Overhead Drum	Vent	Intermittent	Nitrogen
20	PSVs on HTF Overhead Drum	Vent	Intermittent	Nitrogen
21	HTF Collection Sump	Vent	Intermittent	Nitrogen
22	PSVs on HTF Collection Sump	Vent	Intermittent	Nitrogen
23	CCP Flue Gas Stack	Stack	Continuous	Treated Gas
24	Slaked Lime Slurry Tank	Vent	Intermittent	Air
25	Slaked Lime Silo Bag Filter	Vent	Intermittent	Air
26	Quencher FGD Section Drain Tank	Vent	Intermittent	Air
27	Quencher FGD Section Area Sump	Vent	Intermittent	Air
28	PSV on Precoat Filter Air Receiver	Vent	Intermittent	Air
29	PSV on Steam Condensate Drum	Vent	Intermittent	Steam
30	PSV on Reclaimer Steam Condensate Drum	Vent	Intermittent	Steam
31	Solvent Sump Tank	Vent	Intermittent	Air + solvent vapour
32	Solvent Tank	Vent	Intermittent	Air + solvent vapour
33	Fresh Solvent Tank	Vent	Intermittent	Air + solvent vapour
34	Wash Water Tank	Vent	Intermittent	Air
35	Dilute Wash Water Tank	Vent	Intermittent	Air
36	Caustic Soda Tank	Vent	Intermittent	Air + caustic soda vapour
37	Sulphuric Acid Tank	Vent	Intermittent	Air + sulphuric acid vapour
38	Reclaimed Waste Tank	Vent	Intermittent	Air + solvent vapour
39	Storage Area Solvent Sump Tank	Vent	Intermittent	Air + solvent vapour

40	Acid Wash Water Sump Tank	Vent	Intermittent	Air + acid vapour
41	Reclaimed Waste Sump Tank	Vent	Intermittent	Air + solvent vapour
42	Solvent Waste Water Storage Tank	Vent	Intermittent	Air + solvent vapour
43	PSV on CO2 Compressor Discharge Cooler	Vent	Intermittent	Carbon dioxide with water
44	H2 Generation Unit	Vent	Continuous	Oxygen
45	H2 Generation Unit	Vent	Intermittent	Hydrogen
46	PSV on H2 Buffer Drum	Vent	Intermittent	Hydrogen