Sol Environment Limited
[redacted]

t. [redacted]

sol environment

[redacted]
Installations Officer
Environmental Agency
National Permitting Service

Date: 20th November 2025

Our Ref: SOL_24_P076_PCM

Dear [redacted]

RE: EPR/AP3526LV/A002 – ENERGY VENTURES NO1 LTD, SELBY ENERGY RECOVERY PLANT

Please find a response to each of your queries addressed in turn below.

1. The site plan provided is insufficient.

An updated site layout plan is provided within *Annex A – Site Plans* of this letter which shows nearby features, emission points A1, W1 and S1, raw material storage locations and the entrance / exit to the site.

The emission points were submitted on a separate plan 'Annex A – Emission Point Plan' which has been provided again within *Annex A – Site Plans* of this letter. There are no emission points for odour. Inspection / monitoring locations are located at each of the emission points and are not labelled further.

A site drainage plan is also provided within *Annex A – Site Plans* of this letter.

2. More detail is required on the infrastructure considered (secondary containment, tank specification, surfacing etc.).

The facility is to be constructed in its entirety including all drainage, foundation works, steel structure and structural slabs, intermediate floors, stairs, external clad walls, roof system, glazing and external doors.

The site operational areas will be underlain by impermeable concrete hardstanding. The site will be designed in accordance with CIRIA C736 to ensure the containment systems are sufficient to prevent pollution.

The buildings on site are provided with both secondary and tertiary containment. Any spillages, leaks or incidents arising within the buildings will be effectively contained and captured within the footprint of the main building.

All storage tanks will be installed with secondary containment and be designed to comply with the necessary HSE, CIRIA and Environment Agency standards and guidance requirements.

3. Please provide the maximum amount of raw material at any one time on site.

The maximum amount of raw material stored on site at any on time will consist of the following:

- Bunker storage – approximately 1,972 tonnes;
- Baled storage – approximately 530 tonnes;
- Industrial heating oil – 50,000 litres (42 tonnes);
- White diesel – 2,500 litres (2.08 tonnes);
- Sodium bicarbonate – 90 tonnes;
- Powdered Activated Carbon – 27 tonnes;
- Boiler water treatment chemicals (oxygen scavenger and alkalinity booster) – 5 tonnes;
- Salt (NaCl) – 10 tonnes;
- Hydraulic oil – 5 tonnes;
- Gear oils – 1 tonne;
- Greases – <0.5 tonne;
- CEMS calibration gases – <0.5 tonne;
- CEMS zero gas air – <0.3 tonne;
- Propane – <0.2 tonne;
- Solvents / degreasers – <0.5 tonne;
- Paints and thinners – <0.2 tonne;
- Lab reagents (acids, bases etc) – <0.2 tonne; and
- Spill absorbent – 2 tonnes.

Therefore, there will be approximately 2,700 tonnes of raw materials stored on site at any one time.

4. Please provide the raw materials usage efficiency techniques that will be implemented.

The consumption of raw materials, water and energy will be reduced as far as practicably possible by optimising use and reuse where possible on site. In order to improve the overall environmental performance of the combustion of waste, optimisation of the combustion process will be prioritised.

The combustion of pre-prepared wastes ensures that a homogeneous feedstock is used, improving the combustion efficiency of the process.

Reagent dosage will be based on the continuous measurement of pollutants as part of the flue gas treatment system which allows optimised and automated reagent dosing. This ensures that only the necessary amounts of reagents are used. The plant has been designed to ensure efficient air pollution control measures are used, demonstrating BAT as described within the permit application.

Reuse or recycling from the residues produced by the plant will be prioritised, with bottom ash and APC residues handled separately to increase resource efficiency. Bottom ash will be reused where possible as a recycled aggregate.

As part of the permit requirements once operational, the Operator will carry out regular monitoring and reporting of raw material usage on site.

5. Noise Management Plan

A Noise Management Plan has been provided within *Annex B – Noise Management Plan* of this letter.

6. Environmental Risk Assessment

Please confirm the following missing information:

The source and what is expected to be within the effluent and any other discharge which is discharged via the sewer (S1)?

The effluent arising from the process plant will be made up from the following:

- Excess boiler water;
- Bottom ash quench water;
- Backwash from reverse osmosis unit;
- Oil filtered air compressor condensate; and
- Steam trap condensate.

In addition to this, the discharge will also include any runoff from the process halls and reagent areas.

The effluent may contain traces of the following:

- Suspended solids;
- Boiler treatment chemicals;
- Ammonia;
- Sulphates; and
- Chlorides.

Please provide the missing modelling files used for the Human Health Risk Assessment.

The modelling files for the Human Health Risk Assessment are provided within *Annex C – HHRA Modelling Files* of this letter.

7. Air Emissions Risk Assessment

Several model files with different titles were sent over in the application. Please confirm which model file was used for the dispersion modelling report.

The modelling files for the Air Quality Assessment are provided within *Annex D – Air Quality Modelling Files* of this letter.

Provide the emission rates (in g/s) for the proposed facility at: The emission limit values (ELVs) listed in Table B1 of Annex B of the AQA report; and The half-hourly ELVs listed in section 5.3 of the AQA report.

Please refer to the updated tables provided within *Annex E – AQA Emission Rates* of this letter.

8. The BAT assessment provided is missing the following information:

a. Calculations behind how the boiler efficiency figure was calculated.

Please refer to *Annex F – Gross Electrical Efficiency Calculation* for a document showing how the gross electrical efficiency calculation has been calculated.

b. Details of the flue gas cooling method to be used and justification for this choice.

The Selby Energy Recovery Facility uses indirect flue gas cooling through heat recovery in the boiler system only. No quench, evaporative cooling or wet scrubbing processes are used. Cooling is achieved through three sequential stages:

1. Radiation Cooling in the Furnace and Vertical Passes

Hot flue gases from the moving grate furnace first enter three vertically arranged membrane-wall passes. The membrane walls act as evaporator surfaces, removing a large proportion of heat radiatively. This maintains high combustion temperatures and stable burnout conditions before entering the convective boiler sections. The first radiation pass is refractory lined to comply with IED requirements for maintaining >850°C for ≥2 seconds after the final air injection.

2. Convective Cooling in Superheater and Evaporator Bundles

The flue gas then enters the main horizontal convective section containing superheater and evaporator tube bundles. Heat is transferred to raise steam to 45 bar(a), 400°C. Tube bundles are widely spaced and cleaned automatically via pneumatic rappers to maintain stable heat transfer and prevent fouling over extended operating periods.

3. Final Cooling in the Vertical Economiser Tower

A separate vertical economiser tower provides the final sensible heat recovery stage. Feedwater is heated to approximately 138°C. The flue gas exits the economiser at approximately 190°C, remaining safely above the calculated acid dew point for an RDF-fired plant. This protects downstream ductwork and the fabric filter from corrosive condensation.

In summary, flue gas is cooled exclusively by transferring heat into the water / steam cycle. No direct- contact cooling, quenching or water injection is used.

The above stages demonstrate BAT due to the following reasons:

- Maximises Energy Efficiency – cooling only through boiler heat recovery maximises steam generation, turbine output and overall plant efficiency;
- Prevents Low Temperature Corrosion – the system maintains flue gas temperatures above the acid dew point at all times, minimising corrosion risk. Additional corrosion protection is used in high-temperature areas;
- Fully Compatible with Dry Flue Gas Treatment – operating the flue gas at approximately 190°C ensures sodium bicarbonate remains dry, optimises reaction efficiency, prevents condensation on fabric filter bags, and eliminates wastewater;
- High Reliability and Maintainability – automatic cleaning systems maintain heat transfer efficiency. The boiler is designed for 8,000 hours of continuous operation without manual cleaning; and
- Environmental and Permitting Benefits – high efficiency reduced carbon intensity, avoids visible wet plume effects and eliminates waste water streams.

Should you have any further questions in relation to the above please do not hesitate to contact me.

Yours sincerely,

[redacted]