



HSE Risk Register

CO₂ Capture – BOD & Tender Specifications

AEB Amsterdam

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Abbreviations

Abbreviation	Definition
AEB Amsterdam	Afval Energie Bedrijf Amsterdam / Waste to Energy Company Amsterdam
AEC	Afval Energie Centrale / Waste to Energy Plant
ATEX	Atmosphères Explosibles
ALARP	As Low As Reasonably Practicable
CEST	Central European Summer Time
EPC	Engineering Procurement and Construction
ESD	Emergency Shut Down
FEED	Front End Engineering Development
HAZID	Hazard Identification Study
HRC	Hoog Rendement Centrale / High Efficiency (Power) Station
HSE	Health, Safety and Environment
HSSE	Health, Safety, Security and Environment
ISO	International Organization for Standardization
MSDS	Material Safety Data Sheet
OCAP	Organic CO ₂ for Assimilation by Plants
PCC	Post Combustion CO ₂ Capture
PFD	Process Flow Diagram

1 Project Description

This HSE Risk Register applies to the facilities involved in the Post Combustion CO₂ Capture Project (excl. CO₂ liquefaction plant) at AEB Amsterdam.

AEB Amsterdam is a waste processing company located in the Netherlands and currently owned by the City of Amsterdam. AEB is one of the largest waste processing plants in Western Europe processing over 1.4 million tonnes of waste every year. The AEB Amsterdam site has two (2) waste incineration plants namely the AEC (Afval Energie Centrale) and the HRC (Hoog-Rendement Centrale). Waste is incinerated in these two plants to combinedly generate electric power and heat to be supplied to the public grid and the district heating network respectively. The flue gases resulting from the incineration process are at present directly exhausted to atmosphere through 6 flue gas lines by the AEC (4 joint flue gas line lines) and HRC (2 joint flue gas lines) main stacks.

AEB Amsterdam has the ambition to realize a post-combustion CO₂ capture (incl. CO₂ conditioning) plant (PCC Plant) to capture about 0.5 Mton of CO₂ annually from the flue gases of the HRC and AEC units. A CO₂ liquefaction plant could also be installed to deliver liquid CO₂ to nearby greenhouses. For the previous phase of project development, various pre-FEED activities have been completed for the CO₂ capture project and AEB Amsterdam now would like to start the tendering process for a FEED/EPC contract.



Figure 1-1 AEB waste incineration plant (source: internet/public domain)

The key elements of the complete CO₂ capture (incl. CO₂ conditioning) and liquefaction project consists of:

- CO₂ Capture Plant and a CO₂ Conditioning Unit, overall called PCC plant to deliver gaseous CO₂ to the OCAP Grid (backbone) or to the potential CO₂ Liquefaction Plant.

- Potential CO₂ Liquefaction Plant including Liquefaction, Storage, Truck Loading and Evaporation to deliver either liquefied CO₂ to Greenhouses or gaseous CO₂ to the OCAP Grid.
- All physical interfaces between the new CO₂ Capture Plant and a CO₂ Conditioning Unit and the existing AEC and HRC installations.

1.1 Plot Location/Layout

Figure 1-1 below shows the location of the HRC, AEC and proposed area for the PCC plant. The flue gas stacks for the HRC and AEC plants are also shown. Layouts of flue gas lines in Block 10 (L11, L12) and Block 20 (L23, L24) are in principle mirror of each other.



Figure 1-1 Plot Layout HRC, AEC and PCC plant

2 HSE Risk Register

This document provides the List of HSE Actions which have been generated as part of Safety review session (HAZID) for the AURORA project which are required to be closed in the next phases of the project.



Appendix A HSE Risk Register

Refer to separate HSE Risk Register in MS Excel format facilitating follow-up of the recorded safety actions in next project phase(s).