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Pollution Prevention and Control Regulations 2012

Part A Permit - Small-scale production of hydrogen by electrolysis of water

Arbikie Distillery Green Hydrogen

PPC/A/5011109

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Introduction

This introduction is not part of the authorisation.

Authorisations

Who we are: The Scottish Environment Protection Agency (SEPA) is a non-departmental public body of the Scottish Government. Our purpose is to deliver environmental protection and improvement in ways that, as far as possible, also create health and wellbeing benefits and sustainable economic growth.

Why we issue authorisations: We are responsible for preventing or controlling pollution and improving the environment. One of the tools available to us is the authorisation of activities that present environmental risk. Authorisations give permission for these activities to occur and set conditions that the activities must comply with.

When we issue authorisations: We will issue an authorisation following our determination of an application, when satisfied that the authorised person has put in place measures to protect the environment and is capable of carrying out activities in line with the conditions of an authorisation.

Changes to authorisations: We can amend, suspend or revoke an authorisation in response to changes in legislation, the activities undertaken or authorisation holder performance.

Compliance and enforcement: SEPA Officers may undertake monitoring and inspections to assess compliance with authorisation conditions. All authorisations and inspection reports are publicly available. If an authorised person fails to comply with an authorisation, we may take enforcement action in line with our enforcement policy and guidance.

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General information:

Address:	Arbikie Distillery Green Hydrogen Arbikie Highland Estate Distillery, Montrose, DD10 9TR
Description of authorised activities:	The small-scale production of hydrogen by electrolysis of water.
Environmental risks SEPA has regulatory powers to control:	The emission of pollutants to the air, water and ground.

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Grant of Authorisation

This authorisation has been granted by the Scottish Environment Protection Agency (SEPA) in exercise of its powers under Regulation 13 of the Pollution Prevention and Control (Scotland) Regulations 2012.

Authorisation Number:	PPC/A/5011109
Authorised Person:	Arbikie Distillery Green Hydrogen Limited SC723605 4 West Silvermills Lane, Edinburgh, EH3 5BD
Authorised Activities:	The operation of an installation where the following activities are carried out: The production of hydrogen by electrolysis of water and any directly associated activities as further detailed in this authorisation.
Authorised Place:	Arbikie Distillery Green Hydrogen Arbikie Highland Estate Distillery, Montrose, Angus, DD10 9TR
Conditions applicable to this authorisation:	The conditions contained in the schedules of this authorisation. Terms used in this authorisation are, unless otherwise specified, defined in the Interpretation of Terms schedule.
Date of Authorisation:	<<DD/MM/YYYY>>
Effective date of Authorisation:	<<DD/MM/YYYY>>

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Contents

Schedule 1: The Authorised Person and Activities

Purpose: This schedule places responsibility on the authorised person to have systems and procedures in place to ensure compliance with the conditions of this authorisation and details the activities that can be carried out.

1.1 Duty of Authorised Person

1.1.1 The authorised person must ensure compliance with the conditions of this authorisation.

1.2 Authorised Place

1.2.1 The authorised place and installation is delineated in red on the plan in Appendix 1.

1.3 Authorised Activities

1.3.1 This authorisation authorises the operation of the installation in Table 1 to carry out the authorised activities at the authorised place.

Table 1 Installation

Stationary Technical Unit:
An ErreDue 460 kW alkaline electrolyser producing 84 Nm^3/hr of Hydrogen (equating to approximately 2 tonnes/day) together with associated water treatment, power, cooling and ventilation units
Activities:
The production of hydrogen by electrolysis of water as described in Schedule 1, Part 1, Chapter 4, Section 4.2(a)(i) of the Regulations
Directly Associated Activities:
Reverse Osmosis Water purification producing 0.08m^3/hr feedwater at 99.5% purity
Cooling systems
Emergency Venting and pressure relief systems
Discharge to soakaway
Storage of hydrogen gas

Schedule 2: General requirements

2.1 Management and Administration

2.1.1 The Authorised Person must have an appropriate person (and deputy) as the primary point of contact with SEPA and notify SEPA in writing of the name of the appointed person (and deputy) within four weeks of the date of this Permit.

2.1.2 In the event of a different person being appointed to act as primary point of contact (or deputy) the Authorised Person must notify SEPA in writing of the name of the appointed person or deputy without delay.

2.1.3 A copy of this Permit must be kept at the Permitted Installation and must be made readily accessible for examination by all staff.

2.2 Management Systems

2.2.1 The Permitted Installation must be managed and operated in accordance with a written management system.

2.2.2 The written management system required by Condition 2.2.1 must be implemented immediately after Commissioning has concluded.

2.2.3 The written management system must be reviewed as required and at least once every four years. All reviews must be recorded, and the results of any review incorporated into the written management systems, and implemented, within a period of three months from the end of the review.

2.3 Commissioning

2.3.1 As part of the commissioning of the installation, validation tests must be carried out that demonstrate that the installation can be operated in compliance with the conditions of this authorisation.

2.3.2 An end of commissioning report must be submitted to SEPA within four weeks of completing the commissioning of the installation.

2.4 Decommissioning

2.4.1 SEPA must be notified if there is a planned cessation of all, or any part of authorised activities for any period exceeding 12 months. The notification must be submitted to SEPA at least 1 month before the date of planned cessation.

2.4.2 On final cessation of activities, measures must be taken to return to the installation to a satisfactory state.

2.5 Resource efficiency

2.5.1 The authorised activities must be undertaken in a manner that uses resources efficiently and minimises the production of waste.

Schedule 3: Pollution Control

Purpose: This schedule requires the authorised person to ensure emissions to air from the authorised activities are controlled and specified emission limit values are met.

3.1 Start-up and Shut-down

3.1.1 The number of start-ups and shut-downs should be kept to the minimum that is reasonably practicable.

3.1.2 All reasonable steps must be taken to minimise emissions during start up and shut-down.

3.2 Emissions

3.2.1 Measures must be taken to prevent, or where that is not practicable, minimise:

3.2.2 odour; and

3.2.3 noise

arising from the authorised/permitted activities.

3.2.4 Other than condensed water vapour, all releases to the air during normal operations must be free from visible emissions.

3.2.5 Offensive odours from the authorised activities as perceived by a SEPA officer must not be emitted beyond the boundary of the authorised place.

3.2.6 Noise from the authorised activities, which has a significant impact on the environment, people or property, must not be emitted beyond the boundary of the authorised place.

3.2.7 Other than as specially authorised, the authorised activities must not cause environmental harm.

3.3 Emissions Points - Air

3.3.1 Point source emissions to air from the installation must only be made from the emission points specified in Table 2.

3.4 Emissions - Air

3.4.1 The discharge of the substance(s) to the air from the installation must not exceed the relevant emission limit value(s) specified in **Table 2**.

3.4.2 Air must not be added to dilute emissions in order to achieve the emission limit values specified in **Table 2**.

3.4.3 The discharge of any other substance, not specified in **Table 2**, from the installation must not cause environmental harm.

3.4.4 The Operator shall record and report the mass emission results for the parameters of the combined emissions specified in Table 3 using the method as summarised in Table 3. This information shall be reported annually within two months of the end of the calendar year.

3.4.5 Information used to estimate mass emissions in compliance with Condition 3.4.4 shall be recorded for each estimate.

3.5 Venting

3.5.1 All venting events must be recorded and reported to SEPA within 2 months of the end of the calendar year. The record must contain:

(a) The date, time and duration of each venting event;

(b) The vent(s) employed;

(c) An estimate of the quantity of hydrocarbons vented;

(d) The reason for the venting event with identification of the root cause of the event;

(e) Actions taken to minimise emissions during the venting event; and

(f) Actions taken to prevent reoccurrence of the venting event.

3.5.2 SEPA must be notified in writing when any vent is to be taken out of service. The notification must be given at least 24 hours before the vent is taken out of service and must include:

(a) The reason why the vent is out of service;

(b) An estimate of the time that the vent will be out of service; and

(c) A description of how venting operations are to be managed during the period when the vent is out of service.

Table 2 Air Emissions: limits

Substance	Emission Limit Value	Emission Point	Emission source	Operational mode
Hydrogen	No limit set	H2 Vent As Shown on the Air Emissions Plan in Appendix 1	Hydrogen Production	Emergency /pressure relief venting
Oxygen	No limit set	O2 Vent As shown on the Air Emissions Plan in Appendix 1	Oxygen by-product Production	Normal operation
Nitrogen	No limit set	O2 vent As shown on the Air Emissions Plan in Appendix 1	Commissioning Maintenance and Repair	Purging of system

Table 3 Mass Emissions to Air

Substance	Method (Summary)	Mass Emissions result to be recorded as:
Hydrogen	Amount of hydrogen produced minus the sum of the metered amount of hydrogen exported and the amount of fugitive hydrogen emissions	kg
Oxygen	Calculated from the amount of hydrogen produced	kg
Nitrogen	Amount of nitrogen used for purging	Purging

3.6 Emission Point – water

3.6.1 The effluent from the electrolysis process must be discharged to the soakaway at the location specified in Table 4.

Table 4 Discharge Point Location

Activity	Discharge to	Discharge Point	Sample Point NGR
Electrolysis of water	Soakaway	Effluent Distribution Chamber	As shown on the Water Emissions Plan in Appendix 1

3.6.2 The volume of effluent discharged to the soakaway must not exceed 3.51m3/day.

3.6.3 The rate of effluent discharge to the soakaway must not exceed 0.1 litres/second.

3.6.4 The concentration of any chemical parameter in the discharge to the soakaway, must not exceed 3 times the concentration given for that chemical parameter in the current Drinking Water Standards

3.6.5 The effluent must have a pH no less than 6 and no greater than 9

3.6.6 The discharges must not cause pollution of the water environment.

3.6.7 The discharges must not:

(a) be directly into groundwater;

(b) have a significant adverse impact on any water used for human consumption.

3.7 Emissions – water

3.7.1 The operator shall forward to SEPA the results of any effluent monitoring of discharges from the electrolysis process on an annual basis within 2 months of the end of the calendar year.

3.8 Soil and groundwater

3.8.1 Unless specified elsewhere in this Permit, there must be no emission of any pollutants to groundwater or soil from the Permitted Installation.

3.8.2 Surfaces should be of an appropriate specification, and maintained, to ensure compliance with Condition 3.8.1.

3.8.3 The Operator must maintain plan(s) that identify the configuration and specification of all drains and subsurface pipe-work and the position and purpose of all sub-surface sumps and storage vessels that are used or have been used within the Permitted Installation from the date of this Permit until the Permit is surrendered.

3.8.4 All above ground containers and tanks containing liquids whose spillage or release could be harmful to the environment must be bunded.

3.8.5 The Operator must regularly inspect secondary containment and remove any rainwater that has collected.

3.8.6 The Operator must maintain a record of any incident that has, or might have, impacted on the condition of any soil or groundwater under the Permitted Installation, either as a result of that incident or as a result of an accumulation of incidents, together with a record of any further investigation or remediation work carried out.

3.9 Fugitive emissions

3.9.1 Measures must be taken to ensure that fugitive emissions or leaks of hydrogen are prevented.

3.9.2 The Operator shall prepare, implement and maintain a fugitive release inventory for all plant included within the Permitted Installation. The said inventory shall list the main sources of fugitive releases on each plant along with the techniques in place to prevent or minimise emissions from each source. Fugitive emissions shall be quantified (based on composition and mass in kilograms) for each source including the total for each production plant based on monitoring estimates on an annual basis. The fugitive release inventory shall be reported to SEPA on an annual basis, within two months of the end of the calendar year.

3.9.3 The Operator shall implement and maintain an on-going annual Leak Detection and Repair Programme (LDAR) designed to reduce fugitive emissions to air from the production plant. The repair programme shall use monitoring using best available techniques and the annual fugitive release inventory as the basis for targeting improvements.

3.9.4 The Operator shall record and report to SEPA the annual leak repair programme for the forthcoming calendar year along with a review of the previous year's repair programme identifying any improvements made, within two months of the end of the calendar year.

Schedule 4: Monitoring

Purpose: This schedule requires the authorised person to monitor emissions.

4.1 Soil and Groundwater

4.1.1 At least every four years, the Operator must carry out a systematic assessment of all measures used to prevent emissions from the Permitted Installation to soil and groundwater. A written report of each assessment must be recorded and reported to SEPA. The report must include details of and timescales for any additional measures that are required to prevent emissions to soil and groundwater. The first report must be provided 6 months from the date of this permit.

4.1.2 The Operator must monitor the groundwater at the site for the Relevant Hazardous Substances specified in Table 5 at the frequency specified in Table 5, the purpose of which must be to identify groundwater contamination associated with the activities specified in Table 5 by those Relevant Hazardous Substances. Each assessment must be recorded and reported to SEPA. The first assessment must be completed within five years of the issue date of this permit. The assessment must include interpretation of the results with reference to previous monitoring undertaken (including the site and where applicable baseline reports) and operations at the Permitted Installation and details of corrective actions that are required to protect groundwater and remedy any contamination that has occurred a result of permitted activities.

Table 5 Groundwater Monitoring Requirements

Relevant Hazardous Substance(s)	Activity to be Monitored	Frequency
Potassium Hydroxide solution, Transformer Oil, 25% Ethylene Glycol coolant	Hydrogen Production Coolant systems	Every 5 years

4.1.3 The Operator must monitor the soil at the site for the relevant hazardous substances specified in Table 6 at the frequency specified in Table 6, the purpose of which must be to identify soil contamination associated with the activities specified in Table 6 by those Relevant Hazardous Substances. Each assessment must be recorded and reported to SEPA. The first assessment must be completed within 10 years of the issue date of this permit. The assessment must include interpretation of the results with reference to previous monitoring undertaken (including the site and where applicable baseline reports) and operations at the Permitted Installation and details of corrective actions that are required to protect soil and remedy any contamination that has occurred as a result of permitted activities.

Table 6 Soil Monitoring Requirements

Relevant Hazardous Substance(s)	Activity to be Monitored	Frequency
Potassium Hydroxide solution, Transformer Oil, 25% Ethylene Glycol Coolant	Hydrogen Production Coolant System	Every 10 years

4.1.4 The Operator must submit a detailed soil and groundwater monitoring plan, for the monitoring required by 4.1.2 and 4.1.3 to SEPA at least three months in advance of carrying out the monitoring, which must include the locations at which monitoring must be carried out and the methodology which must be used. The monitoring plan must follow the guidance provided in technical guidance document IED-TG-42 for the content of a monitoring plan.

4.1.5 The Operator shall carry out the monitoring required by 4.1.2 and 4.1.3 in accordance with the soil and groundwater monitoring plan required by 4.1.4.

4.1.6 The Operator must review the plan required by 4.1.4 no later than six months after each monitoring event. The purpose of the review must be to determine whether any changes to monitoring locations, frequency or parameters are required and where changes are proposed, submit a revised plan to SEPA.

4.1.7 The Operator must maintain the groundwater monitoring wells detailed in the plan required in 4.1.4 in a condition fit for purpose. Where a monitoring well's function is compromised it must be repaired or replaced to allow sample collection in accordance with 4.1.2 and 4.1.3.

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Schedule 5: Operation of Process

Purpose: This schedule places responsibility on the authorised person to ensure activities are carried out in accordance with required methods of operation.

5.1 Bunding

5.1.1 Containers used for the storage of liquids must stored within a bund/secondary containment system that must:

(a) hold at least:
  (i) for a single container, 110% of its total capacity; or
  (ii) for two or more containers the greater of:
    1) 110% of the capacity of the largest container; or
    2) 25% of the capacity of all containers together.

(b) catch all spills from the container(s) and related parts;

(c) be leak-proof;

(d) be located and/or protected, to prevent damage as far as reasonably practicable;

(e) be stored away from sources of heat; and

(f) have any spills and/or rainwater removed as soon as reasonably practicable.

5.2 Hydrogen storage

5.2.1 The quantity of hydrogen stored at the installation at any one time must not exceed 2 tonnes.

5.3 Raw Materials, Waste Handling and Storage

5.3.1 Waste shall not be stored at the Permitted Installation for periods in excess of one year.

5.3.2 The Operator shall prepare and thereafter maintain a register of the raw materials and wastes. The said register shall be updated at least every six months and shall contain the following records for each raw material or waste type:

(a) A unique reference name or number for identification purposes;
(b) A description of the activity that generated the waste stream, including an indication whether the activity is of a permanent or temporary nature;
(c) Quantities of raw materials stored on-site or waste generated with reference to mass, volume or number of items;
(d) Date on which storage of the raw material or waste commenced and date of removal of the waste from the Permitted Installation;
(e) Location and method of on-site handling and storage of the raw material or waste; and
(f) A description of the type of raw material or waste

Schedule 6: Record Keeping and Data Submission

Purpose: This schedule requires the authorised person to keep records associated with the operation of the installation and submit certain records to SEPA.

6.1 Record Keeping

6.1.1 All information recorded, kept or submitted to SEPA in accordance with a condition of this authorisation must be:

(a) true and accurate; and

(b) kept for a minimum of six years; and

(c) provided to SEPA upon request.

(d) kept for the retention period specified in Table 8.

Table 7 Retention of information requirements

Information	Retention period
Soil and groundwater monitoring	Until surrender of authorisation
All records and reports of any environmental event that has, or might have, impacted on the condition of any soil or groundwater	Until surrender of authorisation
All other information	Six years

6.2 Resource Efficiency

6.2.1 Annual data totals of raw materials, energy utilised, emissions, and waste produced within the installation, must be recorded in the relevant section of the “Systematic assessment of resource use and efficiency template” supplied by SEPA.

6.2.2 A report detailing a review of resource utilisation at the installation must be submitted annually. The report must:

(a) Include the annual data totals required in 6.2.1;

(b) identify ways to reduce raw materials, water used, energy utilised, emissions, and waste produced; and

(c) demonstrate that where possible resource utilisation is improving at the installation year-on-year.

6.2.3 For the purposes of 6.2.2 (a) “raw materials”, “energy” and “fuel” must, as a minimum, include the materials listed in Table 9.

Table 8 Resource type and unit of measurement

Raw material, Energy or Fuel	Unit of Measurement
Hydrogen produced	Kg
Hydrogen exported	Kg
Hydrogen vented and fugitive emissions	Kg
Mains Water to the process	Kg
Electricity (non-fossil fuel sources)	MWh
Electricity (grid supply)	MWh
Diesel	Kg
Nitrogen imported	Kg
Nitrogen emitted	Kg
Oxygen emitted	Kg
Oxygen exported	Kg
Potassium hydroxide solution	Kg
Water purifier cleaning products	Kg
Odorant NB	litres
Effluent discharge to soakaway from the process	kg
Ethylene Glycol coolant	litres

6.3 Soil and groundwater protection assessment report

6.3.1 At least every four years, an assessment of the condition of the installation and infrastructure designed to prevent emissions from the installation to soil and groundwater must be undertaken and reported to SEPA. The assessment report must include:

(a) a review of the effectiveness of the infrastructure designed to prevent emissions to soil and groundwater;

(b) a review of records of any management actions or procedures used to prevent emissions to soil and groundwater and an assessment of their effectiveness.

(c) details of any actions required to maintain the infrastructure so that it prevents emissions to soil and groundwater.

(d) a CCTV or video survey of the drainage systems and process area to ensure their structural integrity and to identify any remedial actions required;

(e) the details of corrective actions required to remedy any contamination that has occurred as a result of the authorised activities; and

(f) the details of any additional measures that are required to prevent emissions to soil and groundwater.

6.4 Data Submission

6.4.1 Where any condition of this authorisation requires information to be reported or notified to SEPA, a report or notification must be forwarded to SEPA by the date(s), the period, and the frequency, specified in Table 3.

Table 9 Reporting and notification requirements

Summary of information to be reported or notified	Condition/ section/ schedule	Date/within period/ frequency to be reported	Date first report due	Address to send report to
Notification of appointed person (and deputy)	2.1.1	Once	Within four weeks of the date of the permit.	ppcdatareturns@sepa.org.uk
Notification of change of appointed person and/or deputy	2.1.2	Without delay as required	-	ppcdatareturns@sepa.org.uk
End of Commissioning Report	2.3.2	Within four weeks of completing the commissioning of the installation	Within four weeks of completing the first commissioning of the installation	ppcdatareturns@sepa.org.uk
Notification where there is a planned cessation of all, or any part of authorised activities for any period exceeding 12 months	2.4.1	At least 1 month before the date of planned cessation	-	ppcdatareturns@sepa.org.uk
Annual mass emission results		Annually within 2 months of the end of the calendar year	By 28 February following permit issue	ppcdatareturns@sepa.org.uk
Report of venting events.		Annually within 2 months of the end of the calendar year	By 28 February following permit issue	ppcdatareturns@sepa.org.uk
Notification when any vent is to be taken out of service.		At least 24 hours before the vent is taken out of service	As required	ppcdatareturns@sepa.org.uk
Results of any effluent monitoring of discharges to Soakaway		Annually within 2 months of the end of the calendar year	By 28 February following permit issue	ppcdatareturns@sepa.org.uk

Summary of information to be reported or notified	Condition/ section/ schedule	Date/within period/ frequency to be reported	Date first report due	Address to send report to
Fugitive release inventory		Annually within 2 months of the end of the calendar year	By 28 February following permit issue	ppcdatareturns@sepa.org.uk
Annual leak repair programme for the forthcoming calendar year		Annually within 2 months of the end of the calendar year	By 28 February following permit issue	ppcdatareturns@sepa.org.uk
Systematic assessment of all measures used to prevent emissions from the Permitted Installation to soil and groundwater		At least every 4 years	Within 6 months from the date of this permit	ppcdatareturns@sepa.org.uk
Monitoring of groundwater		Every 5 years	Within 5 years from the date of this permit	ppcdatareturns@sepa.org.uk
Monitoring of soil		Every 10 years	Within 10 years from the date of this permit	ppcdatareturns@sepa.org.uk
Soil and groundwater monitoring plan		At least three months in advance of carrying out the monitoring	At least three months in advance of carrying out first monitoring	ppcdatareturns@sepa.org.uk
Review of the soil and groundwater monitoring plan		No later than six months after each monitoring event	No later than six months after first monitoring event	ppcdatareturns@sepa.org.uk
Report detailing a review of resource utilisation at the installation		Annually within 2 months of the end of the calendar year	By 28 February following permit issue	ppcdatareturns@sepa.org.uk

Summary of information to be reported or notified	Condition/ section/ schedule	Date/within period/ frequency to be reported	Date first report due	Address to send report to
Assessment of the condition of the installation and infrastructure designed to prevent emissions		At least every 4 years	Within 4 years of the date of the permit	ppcdatareturns@sepa.org.uk
Results of the monitoring of emissions, as described in Schedule 4		No later than two months from the date on which monitoring was undertaken	As required by 4.1.4	ppcdatareturns@sepa.org.uk
Notification of an event as required by 7.1.1		As reasonably practicable, and in any case within 24 hours of identification of the event	As required	Via pollution hotline contact telephone number
Event report		Within 14 days of the event	As required	ppcdatareturns@sepa.org.uk

Schedule 7: Environmental Events

Purpose: This schedule requires the cessation, prevention and reporting of any potentially polluting event that may arise from the authorised activities.

7.1 Notification of SEPA

7.1.1 SEPA must be notified via its pollution hotline contact telephone number as soon as reasonably practicable, and in any case within 24 hours of identification of an event, of any of the following:

(a) an event that has caused or could cause adverse impact to the environment or harm to human health;

(b) an event that results, or could result, in an emission to the environment that is not authorised;

(c) an event that has caused a breach of a condition of this authorisation.

In this condition, the meaning of 'event' is as defined in the Interpretation of Terms in schedule 6 of this authorisation.

7.2 Management of the Event

7.2.1 All measures that are reasonably practicable must be taken to stop an event and to minimise its effect on the environment.

7.3 Reporting of the Event

7.3.1 Within 14 days of an event a report must be submitted to SEPA detailing:

(a) the reason(s) for the event;

(b) the action(s) taken to stop the event and minimise the impacts; and

(c) the action(s) taken to prevent the event from recurring.

Schedule 8: Interpretation of Terms

For the purposes of this authorisation, and unless the context requires otherwise, the following definitions apply.

Term	Definition
authorisation	The permit granted by SEPA under The Pollution Prevention and Control (Scotland) Regulations 2012.
authorised activities	The activities and any directly associated activities which may be carried out under this authorisation.
authorised person	The holder of this authorisation and person responsible for securing compliance with the conditions of it. Has the same meaning as 'operator' as defined in The Pollution Prevention and Control (Scotland) Regulations 2012.
authorised place	The geographic location at which the authorised activities may be carried on.
commissioning	The commencement in operation of the permitted installation or part thereof, for the first time following construction, or after any significant modification or change. It includes: the planning and management of the commissioning or the permitted installation or part thereof; functional testing of equipment; introducing process materials to the plant; resolution of technical and procedural problems; confirmation that all aspects of the plant operate as designed or planned; and confirmation the plant operates within the conditions of the authorisation.
directly associated activity	Any activity which has a technical connection with the activity carried out in the stationary technical unit and which could have an effect on pollution.
dust	Suspended solid particles and liquid droplets suspended in air which may then be deposited on surfaces and may cause air pollution and/or nuisance.

Term	Definition
emission	The direct release of a substance or heat from individual or diffuse sources in an installation into the air, land or water.
emission limit value	The mass, expressed in terms of specific parameters, concentration or level of an emission, which may not be exceed during on or more periods of time. All emission limit values are defined at: (a) temperature of 273.1K; (b) a pressure of 101.3kPa; without correction for water vapour content.
environmental harm	(a) harm to the health of human beings or living organisms, (b) harm to the quality of the environment, including: (i) harm to the quality of the environment taken as a whole, (ii) harm to the quality of air, water or land, and (iii) other impairment of, or interference with, ecosystems, (c) offence to the senses of human beings, (d) damage to property, or (e) impairment of, or any interference with, amenities or other legitimate uses of the environment.
event	(a) Any accident which has caused or could cause environmental harm; or (b Any malfunction, breakdown or failure of plant, infrastructure or techniques which has caused or could cause environmental harm; or (c) Force majeure or action taken to save human life or limb.
hazardous substance	substances or mixtures as defined in Article 3 of (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures.

Term	Definition
installation	(a) stationary technical unit where one or more activities listed in Schedules 1 or 2 of the Regulations are carried out, and (b) any other location on the same site where any other directly associated activities are carried out, any references to an installation include references to part of an installation.
normal operation	Operation of the stationary technical unit excluding start-up and shut-down periods.
point source emission	Single, identifiable source of emission.
the Regulations	The Pollution Prevention and Control (Scotland) Regulations 2012.
relevant hazardous substance	hazardous substances that are capable of contaminating soil and groundwater based upon consideration of the chemical and physical properties of the substance.
resource	Resource means materials, water, waste, residues and energy used within or produced from the regulated process(es) and in any ancillary processes on site.
SEPA	Scottish Environment Protection Agency.
SEPA officer	Any person who is authorised in writing under Section 108 of the Environment Act 1995 to carry out duties on behalf of SEPA.
Start-up	The starting or restarting of all or part of a process following shutdown within an authorised activity before reaching minimum stable operating conditions.

Term	Definition
Shut-down (electroysers)	A period of time where one or more electrolysers, is intentionally placed in a non-operational condition. This includes but is limited to a planned cold standby, where power to the electrolyser in question is cut off, and a nitrogen purge is conducted to safely isolate the unit. A hot standby state, where the electrolyser remains in an idle state but fully ready to operate with only dynamic adjustments to power required to recommence production, is not classified as a shutdown.
Venting event	Any venting of hydrogen via emission point "H2 Vent" shown on the Air Emission Plan
water environment	has the same meaning as in the Water Environment and Water Services (Scotland) Act 2003 that is all surface water, groundwater and wetlands; and "surface water", "groundwater" and "wetlands" shall have the same meanings as in the Act.

Except where specified otherwise, any reference to an enactment or statutory instrument includes a reference to it as amended (whether before or after the date of the authorisation) and to any other enactment, which may after the date of the authorisation replace or amend it.

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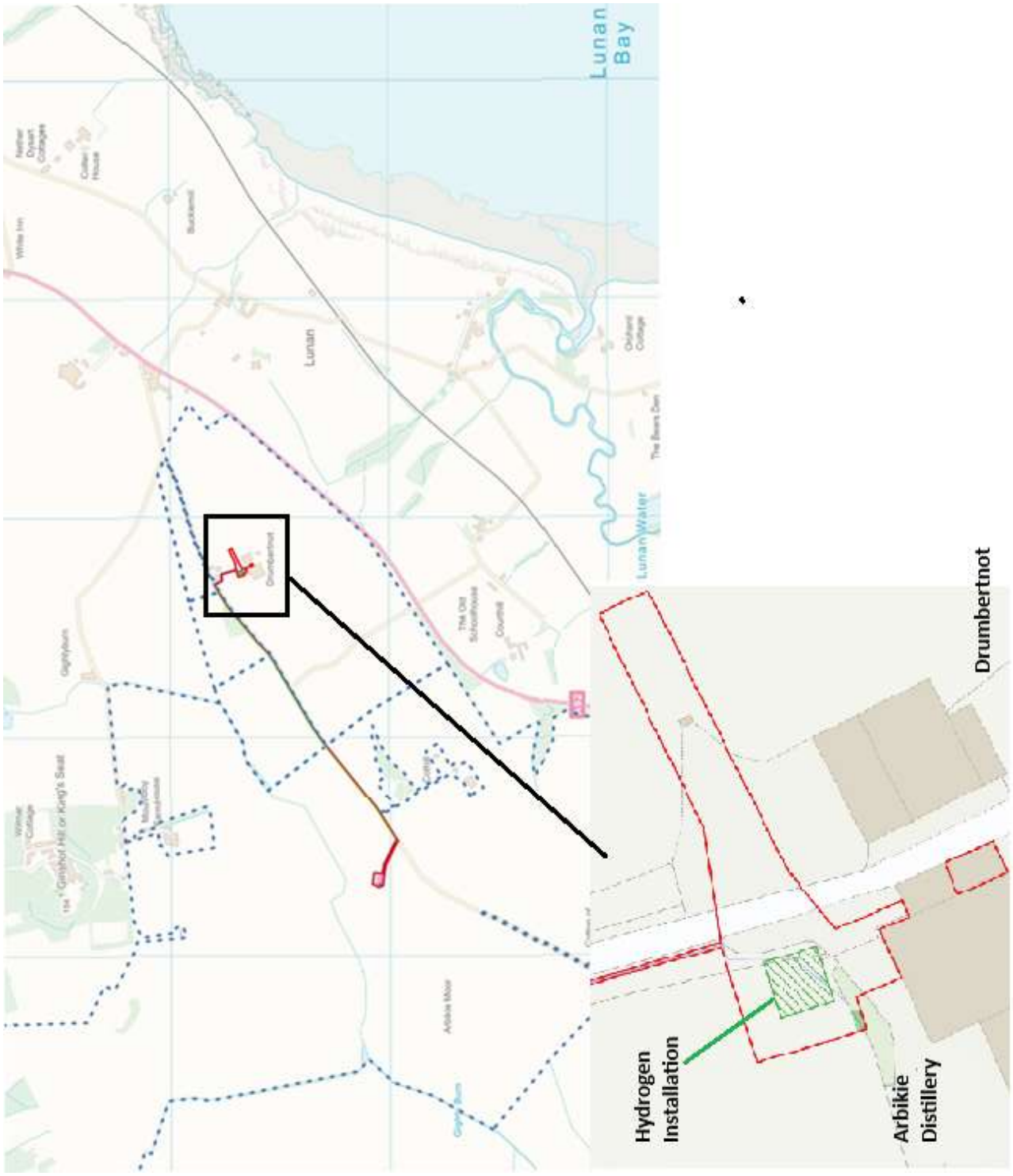
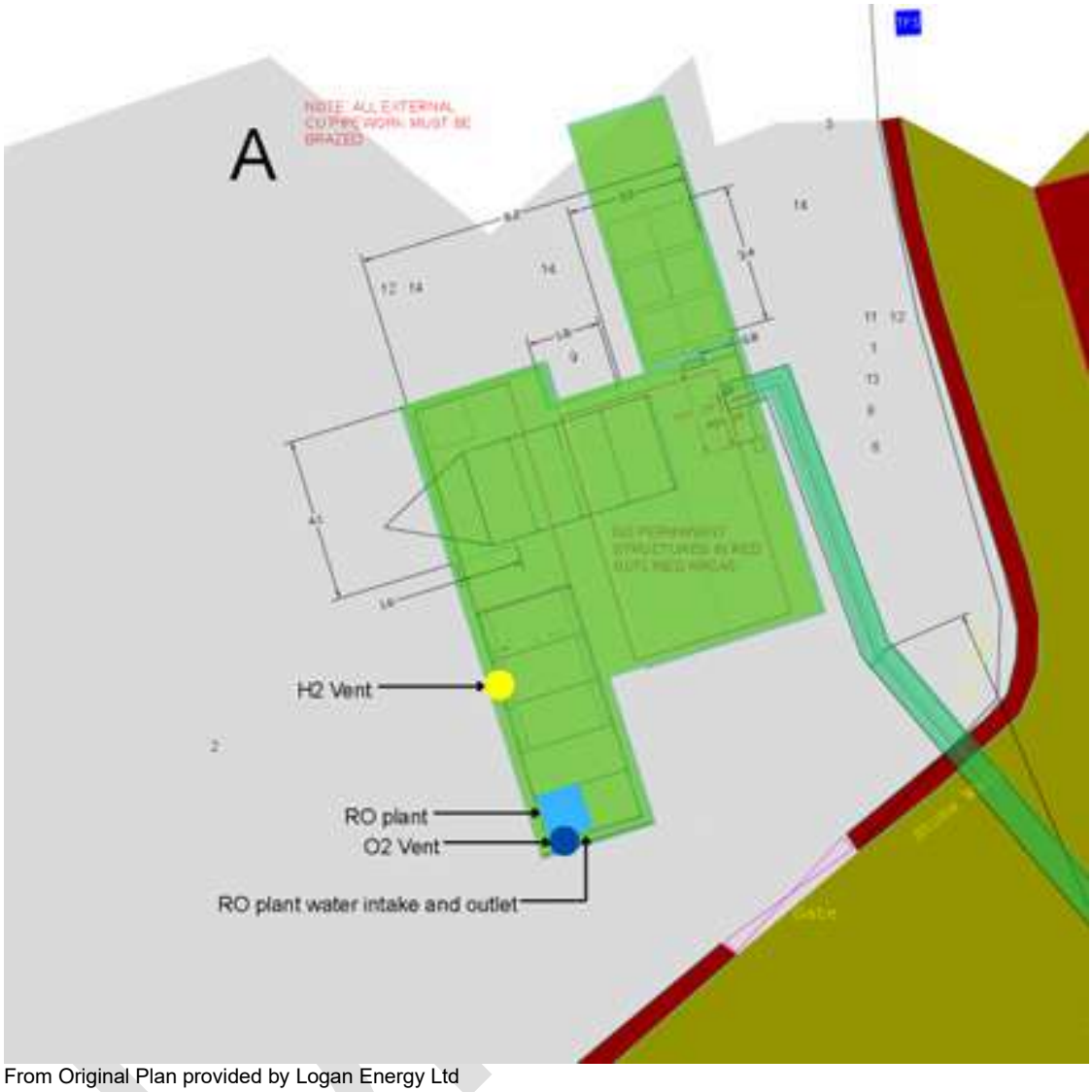
Appendix 1. Plan of Authorised Place and emission points

Plan of Authorised Place



From Original Plan provided by Locogen Consulting Ltd

Air Emission Points



From Original Plan provided by Logan Energy Ltd

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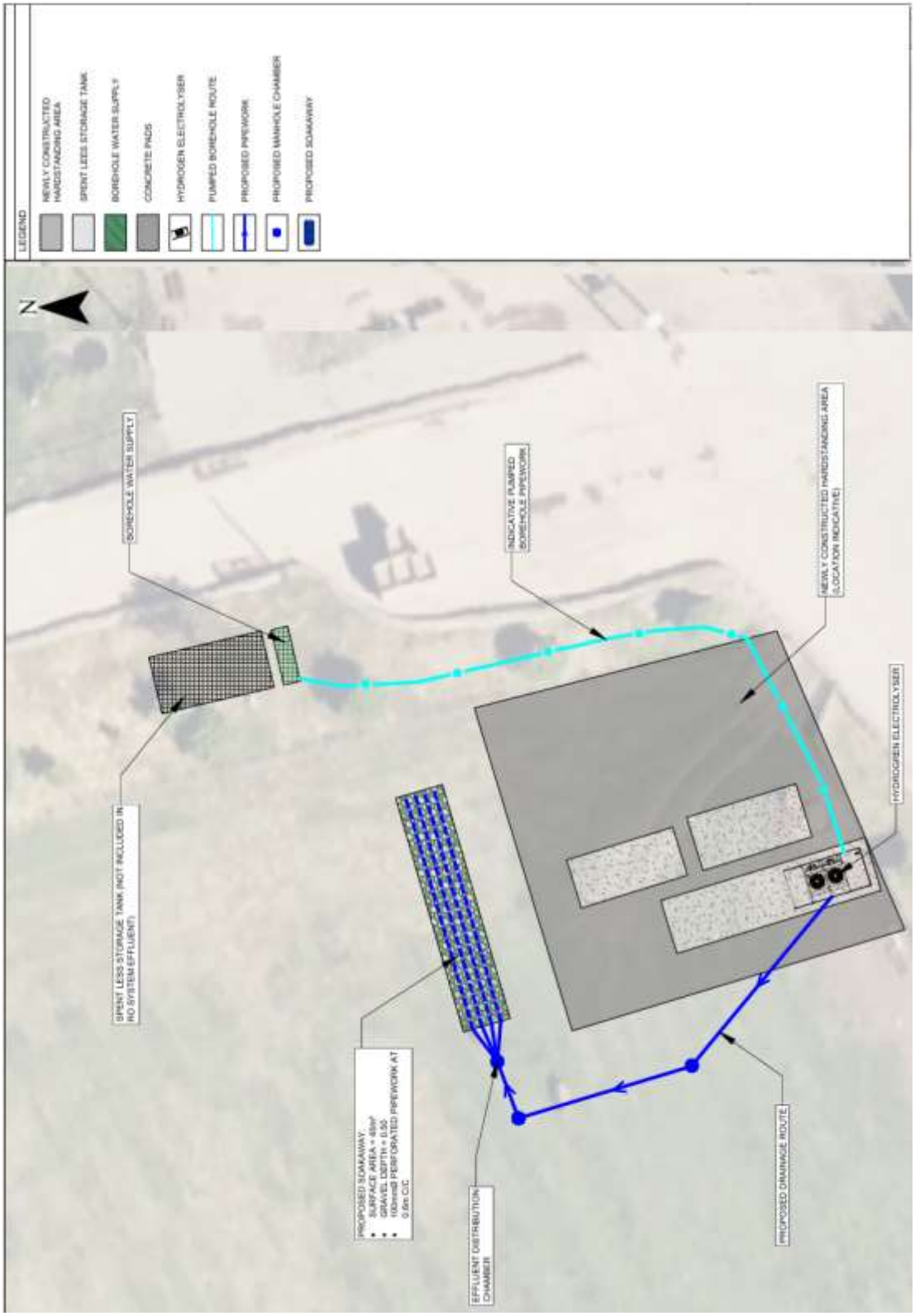
Arbikie Water Emission Points



From Original plan provided by Gondolin Land & Water Ltd

Explanatory Notes

These explanatory notes do not form part of the authorisation.

Best Available Techniques (BAT):

Regulation 22 of the Regulations specifies that there is a condition of an authorisation, that the authorised person must use the best available techniques (BAT) for preventing, or where that is not practicable, reducing emissions from the installation or mobile plant. This is referred to as the 'general' BAT condition. This condition does not apply in relation to any aspect of the operation of the installation or mobile plant, which is regulated by a specific condition of the authorisation. Examples of aspects of the operation that have not been regulated by specific conditions are management supervision systems, training and qualifications and maintenance in general.

In considering BAT, SEPA would expect the authorised person to have regard to all relevant PPC sectoral or other technical guidance, including process guidance notes published by the Scottish Government