

Tynagh CCGT Power Station

Annual Environmental Report 2013

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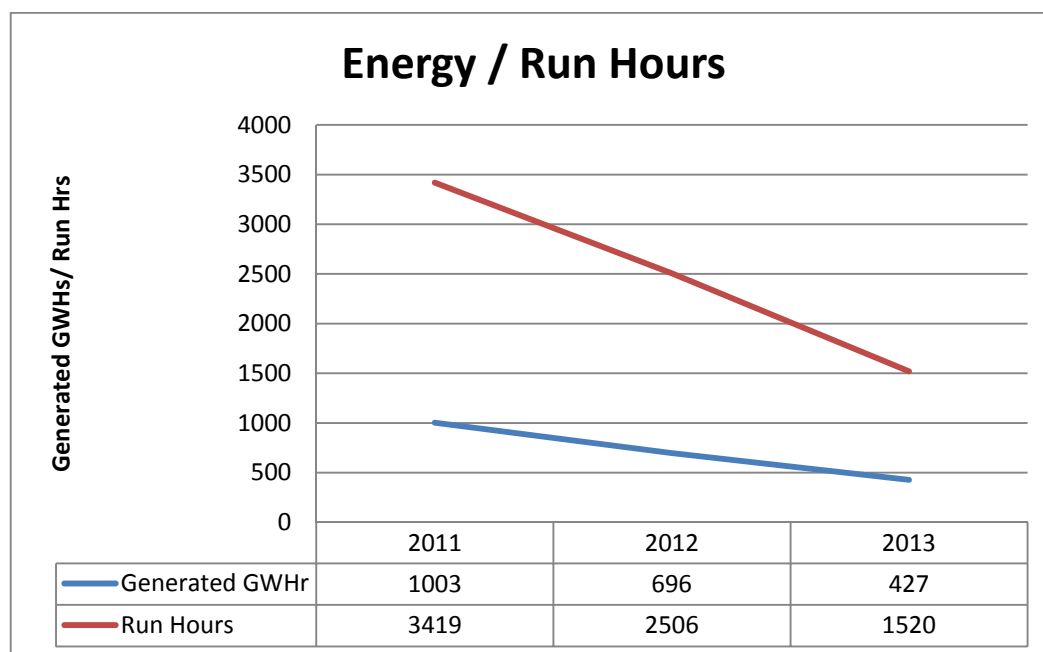
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Executive Summary:

Environmental performance at Tynagh Power Station in 2013 was excellent. There were no breaches, exceedances, non-compliances or complaints.

The power plant running regime was different in 2013 compared to 2012, the plant was dispatched on significantly less. This is a continuation of a trend as can be seen below, which is primarily due to increasing renewables and system constraints. This has resulted in a reduction of our overall emissions and energy usage.



A minor maintenance overhaul of the plant lasting 5 days was conducted in April. This did not significantly affect plant efficiency.

Highlights of environmental projects and operational improvements in 2013 included:



- ISO 14001 and 9001 re-accreditation achieved.
- Achievement of zero non – compliances with the IPPC license.
- A plant Energy Audit was performed as part of ongoing improvement.
- Additional waste water monitoring measures were implemented in line with new license requirements.
- A reduction in hazardous waste production was achieved.
- A major upgrade to the plant compressed air system was implemented and this will result in a reduction in energy consumption in 2014.

Facility Summary Information

Facility Information Summary	
AER Reporting Year	2013
Licence Register Number	P0700-02
Name of site	Tynagh Energy Limited
Site Location	Derryfrench, Tynagh, Loughrea, Co Galway
NACE Code	3511
Class/Classes of Activity	The operation of combustion installations with a rated thermal
National Grid Reference (6E, 6 N)	1745E, 21293N
<p>A description of the activities/processes at the site for the reporting year. This should include information such as production increases or decreases on site, any infrastructural changes, environmental performance which was measured during the reporting year and an overview of compliance with your licence <u>listing all exceedances of licence limits (where applicable) and what they relate to e.g. air, water, noise.</u></p>	
<p>The site consists of a 400 Megawatt combined cycle gas turbine power plant that has been built on the former Tynagh Mines site, Loughrea, Co. Galway. Tynagh Energy Limited is the site licensee. The site IPPC license was issued in 2004 and became operational in March 2006. This report covers the seventh full commercial year of licensed activity. The plant is operated and maintained by GE Energy (Ireland) Limited on behalf of Tynagh Energy Ltd.</p> <p>In 2013 the plant was dispatched to a significant lower level of operations. This resulted in lower levels of emissions when compared to 2012. We were in full compliance with IPPC licence requirements in 2013, no emission exceedances or breaches occurred. We continue to work to improve our environmental performance.</p>	

Declaration:

All the data and information presented in this report has been checked and certified as being accurate. The quality of the information is assured to meet licence requirements.

	
Paul Collins	28-Mar-14
Facility manager , GE Energy (Ltd)	Date
Reviewed and approved by	
	
Colin D'Arcy	28-Mar-14
Operations Manager, Tynagh Energy (Ltd)	Date

Air

AIR-summary template	Lic No:	P0700-02	Year	2013
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Answer all questions and complete all tables where relevant

- 1 Does your site have licensed air emissions? If yes please complete table A1 and A2 below for the current reporting year and answer further questions. If **you do not have** licenced emissions and **do not complete a solvent management plan** (table A4 and A5) you do not need to complete the tables

Additional information	
Yes	

Periodic/Non-Continuous Monitoring

- 2 Are there any results in breach of licence requirements? If yes please provide brief details in the comment section of TableA1 below

No	
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- 3 Was all monitoring carried out in accordance with EPA guidance note AG2 and using the basic air monitoring checklist?

[Basic air monitoring checklist](#)

[AGN2](#)

Yes	
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Table A1: Licensed Mass Emissions/Ambient data-periodic monitoring (non-continuous)

Emission reference no:	Parameter/ Substance	Frequency of Monitoring	ELV in licence or any revision thereof	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence limit	Method of analysis	Annual mass load (kg)	Comments -reason for change in % mass load from previous year if applicable
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note 1: Volumetric flow shall be included as a reportable parameter

AIR-summary template	Lic No:	P0700-02	Year	2013
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Continuous Monitoring		
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4	Does your site carry out continuous air emissions monitoring?	Yes	
	If yes please review your continuous monitoring data and report the required fields below in Table A2 and compare it to its relevant Emission Limit Value (ELV)		
	Did continuous monitoring equipment experience downtime? If yes please record downtime in table A2 below		
5		No	Any required maintenance took place during planned shutdown of the plant.
	Do you have a proactive service agreement for each piece of continuous monitoring equipment?		
6		No	Trained and qualified technicians maintain and calibrate monitoring equipment on site. If additional expertise is required this is obtained as required. Back-up spare equipment is also kept and maintained on site.
7	Did your site experience any abatement system bypasses? If yes please detail them in table A3 below	No	

Table A2: Summary of average emissions - continuous monitoring

Emission reference no:	Parameter/ Substance	ELV in licence or any revision thereof	Averaging Period	Compliance Criteria	Units of measurement	Annual Emission	Annual maximum	Monitoring Equipment downtime (hours)	Number of ELV exceedences in current reporting year	Comments
A2.1	Nitrogen oxides (NOx/NO2)	50 mg/m ³ on GAS. 120 mg/m ³ on Gasoil (Diesel)	1 hour	All 1-hour averages < 2 x ELV	mg/Nm ³	77335.64 Kg	949,000 Kg On Gas. 2,689,320 Kg On Gasoil (Diesel)	Zero	Zero	Dual fuel site corrected to 15% oxygen.
A2.1	Carbon monoxide (CO)	25 mg/m ³ on Gas. 40 mg/m ³ on Gasoil (Diesel)	1 hour	All 1-hour averages < 2 x ELV	mg/Nm ³	162765.63 Kg	474500 Kg On Gas. 896,440 Kg On Gasoil (Diesel)	Zero	Zero	Dual fuel site corrected to 15% oxygen.
A2.1	Sulphur oxides (SOx/SO2)	120 mg/m ³ on Gasoil (Diesel)	1 hour	All 1-hour averages < 2 x ELV	mg/Nm ³	4778.71 Kg	2,689,320 Kg On Gasoil (Diesel)	Zero	Zero	Dual fuel site corrected to 15% oxygen.
A2.1	Volumetric flow	5.2E+7 m ³	1 Day	Daily average < ELV	m ³	1.791 E+9, m ³	1.9 E+10 m ³ on Gas 2.24 E+10 m ³ on Gasoil (Diesel)	Calculated value	Zero	Dual fuel site corrected to 15% oxygen.

note 1: Volumetric flow shall be included as a reportable parameter.

Table A3: Abatement system bypass reporting table

[Bypass protocol](#)

Date*	Duration** (hours)	Location	Reason for bypass	Impact magnitude	Corrective action

* this should include all dates that an abatement system bypass occurred

** an accurate record of time bypass beginning and end should be logged on site and maintained for future Agency inspections please refer to bypass protocol link

Waste Water

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)			Lic No:	P0700-02	Year	2013
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Does your site have licensed emissions direct to surface water or direct to sewer? If yes please complete table W2 and W3 below for the current reporting year and answer further questions.
 1 If **you do not have** licensed emissions you only need to complete table W1 and or W2 for storm water analysis and visual inspections

Was it a requirement of your licence to carry out visual inspections on any surface water discharges or watercourses on or near your site? If yes please complete table W2 below summarising only any evidence of contamination noted during visual inspections

Yes	Trained and qualified technicians maintain and calibrate monitoring equipment on site. If additional expertise is required this is obtained as required.
Yes	Daily visual inspections at surface water discharge location SW2. No contamination observed in surface water discharges during 2013.

Table W1 Storm water monitoring

Location reference	Location relative to site activities	PRTR Parameter	Licensed Parameter	Monitoring date	ELV or trigger level in licence or any	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Comments
ASW1	Downstream	N/A	Conductivity	12-Jun-13	N/A	N/A	956	µS/cm	Yes	Ambient monitoring of receiving waters (lake) as per licence
ASW1	Downstream	N/A	Ammonia (as N)	12-Jun-13	N/A	N/A	0	mg/L	Yes	Ambient monitoring of receiving waters (lake) as per licence
ASW1	Downstream	N/A	Total Phosphorous (as P)	12-Jun-13	N/A	N/A	<0.05	mg/L	Yes	Ambient monitoring of receiving waters (lake) as per licence
ASW1	Downstream	N/A	Sulphate (as SO ₄)	12-Jun-13	N/A	N/A	377	mg/L	Yes	Ambient monitoring of receiving waters (lake) as per licence
ASW1	Downstream	N/A	Conductivity	04-Dec-13	N/A	N/A	963	µS/cm	Yes	Ambient monitoring of receiving waters (lake) as per licence
ASW1	Downstream	N/A	Ammonia (as N)	04-Dec-13	N/A	N/A	0	mg/L	Yes	Ambient monitoring of receiving waters (lake) as per licence
ASW1	Downstream	N/A	Total Phosphorous (as P)	04-Dec-13	N/A	N/A	<0.05	mg/L	Yes	Ambient monitoring of receiving waters (lake) as per licence
ASW1	Downstream	N/A	Sulphate (as SO ₄)	04-Dec-13	N/A	N/A	382	mg/L	Yes	Ambient monitoring of receiving waters (lake) as per licence

*trigger values may be agreed by the Agency outside of licence conditions

Table W2 Visual inspections-Please only enter details where contamination was observed.

Location Reference	Date of inspection	Description of contamination	Source of contamination	Corrective action	Comments
N/A	N/A	N/A	N/A	N/A	N/A

Licensed Emissions to water and /or wastewater(sewer)-periodic monitoring (non-continuous)

3 Was there any result in breach of licence requirements? If yes please provide brief details in the comment section of Table W3 below

Was all monitoring carried out in accordance with EPA guidance and checklists for Quality of Aqueous Monitoring Data Reported to the EPA? If no please detail what areas require improvement in additional information box

[External/Internal Lab Quality checklist](#) [Assessment of results checklist](#)

No	All wastewater monitoring was found in compliance with licence conditions.
Yes	Site lab has developed and maintained a quality manual and attended EPA conferences on Lab assurance quality control, and EPA webinars. Extra training of all staff who use the lab was carried out internally this year and documented. Operation of these requirements is an on-going project. Where necessary an accredited lab is also used for analysis.

AER Monitoring returns summary template-WATER/WASTEWATER(SEWER)

Lic No:

P0700-02

Year

2013

Table W3: Licensed Emissions to water and /or wastewater (sewer)-periodic monitoring (non-continuous)

Emission reference no:	Emission released to	Parameter/ SubstanceNote 1	Type of sample	Frequency of monitoring	Averaging period	ELV or trigger values in licence or any revision thereofNote 2	Licence Compliance criteria	Measured value	Unit of measurement	Compliant with licence	Method of analysis	Procedural reference source	Procedural reference standard number	Annual mass load (kg)	Comments
SW1	Water	Total Dissolved Solids	Composite	Weekly	Weekly	5000	All results < 1.2 times ELV, plus 8 from ten results must be < ELV	1216	mg/L	Yes	Gravimetric analysis	Other (please specify)	Standard Methods for the Examination of Water and Wastewater, 20th edition 1997, Method 2540-D	27702.3	Lower values in 2013 mostly due to reduced plant operation hours. Measured weekly average used here.
SW1	Water	Suspended Solids	Composite	Weekly	Weekly	30	All results < 1.2 times ELV, plus 8 from ten results must be < ELV	10	mg/L	Yes	Gravimetric analysis	Other (please specify)	Standard Methods for the Examination of Water and Wastewater, 20th edition 1997, Method 2540-C	223.96	Lower values in 2013 mostly due to reduced plant operation hours. Measured weekly average used here.
SW1	Water	Ammonia (as N)	Composite	Weekly	Weekly	1.5	All results < 1.2 times ELV, plus 8 from ten results must be < ELV	0.18	mg/L	Yes	Spectrophotometry (Colorimetry)	Other (please specify)	Adapted from Standard Methods for the Examination of Water and Wastewater, 20th edition 1997, Method 4500-NH3 and ASTM D1426 - 08 Standard Test Methods for Ammonia Nitrogen in Water	5.4	Lower values in 2013 mostly due to reduced plant operation hours. Measured weekly average used here.
SW1	Water	Total Phosphorus (as P)	Composite	Weekly	Weekly	0.1	All results < 1.2 times ELV, plus 8 from ten results must be < ELV	< 0.05	mg/L	Yes	Digestion + Spectrophotometry	Apha/Awwa "Standard methods"	Standard Methods for the Examination of Water and Wastewater, 20th edition 1997, Method 4500-P-E	1.1	Lower values in 2013 mostly due to reduced plant operation hours. Measured weekly average used here.
SW1	Water	BOD	Composite	Monthly	Monthly	20	All results < 1.2 times ELV, plus 8 from ten results must be < ELV	<1	mg/L	Yes	Digestion + Spectrophotometry	Other (please specify)	Standard Methods for the Examination of Water and Wastewater, 20th edition 1999, Method 5210-B	84.8	Measured monthly average used here.
SW1	Water	Sulphate (as SO ₄)	Composite	Quarterly	quarterly	n/a		611.25	mg/L	Yes	Spectrophotometry	Other (please specify)	Standard Methods for the Examination of Water and Wastewater, 20th edition 1997, Method 4500-SO4-E	947.5	New parameter on updated IPPC licence 2013 - measured quarterly - average given here.
SW2	Water	COD	Discrete	Weekly	Weekly	50 WL 80 AL*	*not specified in licence site follows EQS	8.9	mg/L	Yes	Spectrophotometry (Colorimetry)	ISO	Standard Methods for the Examination of Water and Wastewater, 20th edition 1997, Method 5220-D	not applicable	Measured weekly average used here.
SW2	Water	pH	Discrete	Weekly	Weekly	6-9*	*not specified in licence site follows EQS	8.2	pH units	Yes	pH Meter (Electrode)	Apha/Awwa "Standard methods"	Standard Methods for the Examination of Water and Wastewater, 20th edition 1997, Method 4500-H-B	not applicable	Measured weekly average used here.
SW2	Water	Total Petroleum Hydrocarbons	Discrete	Weekly	Weekly	<1	*not specified in licence site follows EQS	<1	mg/L	Yes	GC (Gas Chromatography)	US EPA	Method for EPH, mass de	not applicable	Measured weekly average used here.

Note 1: Volumetric flow shall be included as a reportable parameter

Note 2: Where Emission Limit Values (ELV) do not apply to your licence please compare results against EQS for Surface water or relevant receptor quality standards

Bund / Pipeline testing

Bund/Pipeline testing template	Lic No:	P0700-02	Year	2013
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Bund testing

dropdown menu click to see options

Additional information

Are you required by your licence to undertake integrity testing on bunds and containment structures? If yes please fill out table B1 below listing all **new bunds and containment structures** on site, in addition to **all bunds which failed the integrity test-all bunding structures which failed including mobile bunds must be listed in the table below, please include all bunds outside the licenced testing period** (mobile bunds and chemstore included)

1 Please provide integrity testing frequency period

Does the site maintain a register of bunds, underground pipelines (including stormwater and foul), Tanks, sumps and containers? (containers refers to

3 "Chemstore" type units and mobile bunds)

4 How many bunds are on site?

5 How many of these bunds have been tested within the required test schedule?

6 How many mobile bunds are on site?

7 Are the mobile bunds included in the bund test schedule?

8 How many of these mobile bunds have been tested within the required test schedule?

9 How many sumps on site are included in the integrity test schedule?

10 How many of these sumps are integrity tested within the test schedule?

Please list any sump integrity failures in table B1

11 Do all sumps and chambers have high level liquid alarms?

12 If yes to Q11 are these failsafe systems included in a maintenance and testing programme?

13 Is the Fire Water Retention Pond included in your integrity test programme?

Yes	Clause 6.9 of licence
3 years	Clause 6.9 of licence
Yes	This is available on site.
33	
33	
7	
Yes	
7	
3	
3	

No	Outside bunds have alarms, mobile bunds and inside bunds do not.
Yes	Included in maintenance system. PM number BOP-1581
N/A	

Table B1: Summary details of bund /containment structure integrity test

Bund/Containment structure ID	Type	Specify Other type	Product containment	Actual capacity	Capacity required*	Type of integrity test	Other test type	Test date	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
M.1	Reinforced concrete		Diesel	4850 litres	1801 litres	Hydraulic test		02-Mar-14	Yes	Pass	No failure but new bund constructed externally to replace internal bund M.1 and therefore included here as per page 7 of AER guidance document v.3 Dec 2013	No corrective action required.	2017	n/a
P.3	other (please specify)	Mobile polyethylene bund	Oil	3360 litres	2760 litres	Other (please specify)	Visual	03-Mar-14	Yes	Pass	No failure but new bund and therefore included here as per page 7 of AER guidance document v.3 Dec 2013	No corrective action required.	2017	n/a
P.4	other (please specify)	Mobile polyethylene bund	Hazardous waste	2716 litres	2300 litres	Other (please specify)	Visual	03-Mar-14	Yes	Pass	No failure but new bund and therefore included here as per page 7 of AER guidance document v.3 Dec 2013	No corrective action required.	2017	n/a

*Capacity required should comply with 25% or 100% containment rule as detailed in your licence

Has integrity testing been carried out in accordance with licence requirements and are all structures tested

15 In line with BS8007/EPA Guidance?

16 Are channels/transfer systems to remote containment systems tested?

17 Are channels/transfer systems compliant in both integrity and available volume?

[bundings and storage guidelines](#)

Commentary

Yes	Site testing procedures follow this guidance.
Yes	
Yes	

Pipeline/underground structure testing

Are you required by your licence to undertake integrity testing* on underground structures e.g. pipelines or sumps etc? If yes please fill out table 2 below listing

1 all underground structures and pipelines on site **which failed the integrity test and all which have not been tested within the integrity test period as specified**

2 Please provide integrity testing frequency period

*please note integrity testing means water tightness testing for process and foul pipelines (as required under your licence)

Yes	Clause 6.9 of licence
3 years	Clause 6.9 of licence

Table B2: Summary details of pipeline/underground structures integrity test

Structure ID	Type system	Material of construction:	Does this structure have Secondary containment?	Type of secondary containment	Type integrity testing	Integrity reports maintained on site?	Results of test	Integrity test failure explanation <50 words	Corrective action taken	Scheduled date for retest	Results of retest(if in current reporting year)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Failures as reported in 2012 AER have all been repaired and successfully retested.

Groundwater / Soil

Groundwater/Soil monitoring template	Lic No:	P0700-02	Year	2013
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		Comments	
1	Are you required to carry out groundwater monitoring as part of your licence requirements?	Yes	Schedule C6
2	Are you required to carry out soil monitoring as part of your licence requirements?	No	
3	Do you extract groundwater for use on site? If yes please specify use in comment section	No	
4	Do monitoring results show that groundwater generic assessment criteria such as GTVs or IGVs are exceeded or is there an upward trend in results for a substance? If yes, please complete the Groundwater Monitoring Guideline Template Groundwater monitoring template Report (link in cell G8) and submit separately through ALDER as a licensee return AND answer questions 5-12 below.	No	Please provide an interpretation of groundwater monitoring data in the interpretation box below or if you require additional space please include a groundwater/contaminated land monitoring results interpretation as an additional section in this AER Although no limits are specified in the Tynagh Energy Ltd IPPC licence for the parameters monitored, the concentrations of compound analysed show no evidence of contamination. No further investigation or assessment is required until the next scheduled round of monitoring, due to be completed in the first half of 2014.
5	Is the contamination related to operations at the facility (either current and/or historic)	No	
6	Have actions been taken to address contamination issues? If yes please summarise remediation strategies proposed/undertaken for the site	SELECT	
7	Please specify the proposed time frame for the remediation strategy	SELECT	
8	Is there a licence condition to carry out/update ELRA for the site?	SELECT	
9	Has any type of risk assessment been carried out for the site?	SELECT	
10	Has a Conceptual Site Model been developed for the site?	SELECT	
11	Have potential receptors been identified on and off site?	SELECT	
12	Is there evidence that contamination is migrating offsite?	SELECT	

Table 1: Upgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration++	Average Concentration+	unit	GTV's*	SELECT**	Upward trend in pollutant concentration over last 5 years of monitoring data
2013	AGW1	pH	pH Electrode	Bi-annual	not applicable	7.3	pH units		SW EQS	No
2013	AGW1	Diesel range organics	Standard method	Bi-annual	not applicable	<0.01	mg/l		SW EQS	No

.+ where average indicates arithmetic mean

.++ maximum concentration indicates the maximum measured concentration from all monitoring results produced during the reporting year

Groundwater/Soil monitoring template

Lic No:

P0700-02

Year

2013

Table 2: Downgradient Groundwater monitoring results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit	GTV's*	SELECT**	Upward trend in yearly average pollutant concentration over last 5 years of monitoring data
2013	AGW3	pH	pH Electrode	Bi-annual	not applicable	7.3	pH units		SW EQS	No
2013	AGW3	Diesel range organics	Standard method	Bi-annual	not applicable	<0.01	mg/l		SW EQS	No
2013	AGW4	pH	pH Electrode	Bi-annual	not applicable	7.3	pH units		SW EQS	No
2013	AGW4	Diesel range organics	Standard method	Bi-annual	not applicable	<0.01	mg/l		SW EQS	No

*please note exceedance of generic assessment criteria (GAC) such as a Groundwater Threshold Value (GTV) or an Interim Guideline Value (IGV) or an upward trend in results for a substance indicates that further interpretation of monitoring results is required. In addition to completing the above table, please complete the Groundwater Monitoring Guideline Template Report at the link provided and submit separately through ALDER as a licensee return or as otherwise instructed by the EPA.

[Groundwater monitoring template](#)

More information on the use of soil and groundwater standards/ generic assessment criteria (GAC) and risk assessment tools is available in the EPA published guidance (see the link in G31)

[Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites \(EPA 2013\).](#)

**Depending on location of the site and proximity to other sensitive receptors alternative Receptor based Water Quality standards should be used in addition to the GTV e.g. if the site is close to surface water compare to Surface Water Environmental Quality Standards (SWEQS). If the site is close to a drinking water supply compare results to the Drinking Water Standards (DWS)

[Groundwater regulations](#) [Drinking water \(private supply\) standards](#) [Drinking water \(public supply\) standards](#) [Interim Guideline Values \(IGV\)](#)
[Surface water EQS](#) [GTV's](#)

Table 3: Soil results

Date of sampling	Sample location reference	Parameter/ Substance	Methodology	Monitoring frequency	Maximum Concentration	Average Concentration	unit
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Environmental Liabilities

Environmental Liabilities template	Lic No:	P0700-02	Year	2013
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Click here to access EPA guidance on Environmental Liabilities and Financial provision		
		Commentary
1 ELRA initial agreement status	Submitted and agreed by EPA	Approved 29/07/2014
2 ELRA review status	Review required and completed	Review completed prior to submission to EPA in May 2013
3 Amount of Financial Provision cover required as determined by the latest ELRA	€ 1,640,000	
4 Financial Provision for ELRA status	Submitted and not agreed by EPA	Awaiting response from EPA on suitability of insurance as FP.
5 Financial Provision for ELRA - amount of cover	€ 3,000,000	
6 Financial Provision for ELRA - type	Environmental Impairment Liability insurance	
7 Financial provision for ELRA expiry date	31/3/2014	Renewed as of 31/03/2014
8 Closure plan initial agreement status	Closure plan submitted and agreed by EPA	Approved 29/07/2014
9 Closure plan review status	Review required and completed	Review completed prior to submission to EPA in May 2013
10 Financial Provision for Closure status	Submitted and agreed by EPA	
11 Financial Provision for Closure - amount of cover	€ 500,000	
12 Financial Provision for Closure - type	Other please specify	Letter of Credit
13 Financial provision for Closure expiry date	04/07/2014	

Environmental Management Programme

Programme/Continuous		Lic No:	P0700-02	Year	2013
Highlighted cells contain dropdown menu click to view		Additional Information			
1	Do you maintain an Environmental Mangement System (EMS) for the site. If yes, please detail in additional information	Yes	ISO 14001		
2	Does the EMS reference the most significant environmental aspects and associated impacts on-site	Yes			
3	Does the EMS maintain an Environmental Management Programme (EMP) as required in accordance with the licence requirements	Yes			
4	Do you maintain an environmental documentation/communication system to inform the public on environmental performance of the facility, as required by the licence	Yes	Documented in site procedures		

Environmental Management Programme (EMP) report					
Objective Category	Target	Status (% completed)	How target was progressed	Responsibility	Intermediate outcomes
Waste reduction/Raw material usage efficiency	Benchmarking our monthly waste production against run-rates from 2010, 2011, 2012, 2013	100	Ongoing project where monthly waste data generated is compared and reported monthly.	Waste Team	Increased on-going waste management control on site, non-hazardous waste increase in 2013 due to clean out of wastewater tanks, decrease in hazardous waste and most other waste streams.
Waste reduction/Raw material usage efficiency	Waste team award to best staff suggestion for reducing waste used on site.	100	Award proposal to site team, review of suggestions by waste team on submissions.	Waste Team	Award for compressor project which had demonstrated significant energy use savings.
Waste reduction/Raw material usage efficiency	Toner and printer cartridges recycling	100	Contacted various vendors and ensure compliance with waste regulations.	Waste Team	Toner and print cartridge recycling program in operation.
Waste reduction/Raw material usage efficiency	Review of oil and water waste disposal	20	Review possibility to separate out water from oil/water	Waste Team	
Waste reduction/Raw material usage efficiency	Air compressor plant improvement to reduce energy loss	90	Project was designed, procured and installed in line with site procedures.	Waste Team	System set up, installed and to be put into operation early 2014
Energy Efficiency/Utility conservation	Continue to improve monitoring of plant to ensure ongoing thermal performance and efficiency including non-base load running	20	Basic monitoring in place including heat rate and monthly efficiency & monthly monitoring reports.	Operations manager	Monthly basic plant efficiency monitoring , Identification of any areas with loss of efficiency. Further improvements planned for 2014 and benchmarking with other OM sites
Energy Efficiency/Utility conservation	Start-up operations training to standardise start-ups and thereby avoid extended periods in higher emissions mode.	70	Training provided to operations team in 2013 with remaining training planned for 2014.	Operations manager	Improved operations start-up and reliability across operations team. Further training planned for 2014
Energy Efficiency/Utility conservation	Air cooled condenser - Wash	10	Service water line connected to area to allow for easier power washing of this area.	Operations manager	Planned for 2014

Programme/Continuous			Lic No:	P0700-02	Year	2013
Energy Efficiency/Utility conservation	Complete new Energy audit and review recommendations	100	energy audit completed with approved vendor 2013.	Maintenance Manager	Recommendations from energy audit to be reviewed and where practical be implemented in 2014.	
Energy Efficiency/Utility conservation	Continue review and implement other feasible energy efficiency projects.	100	Suitable Plant improvements are identified and implemented where possible.	Maintenance Manager	Ongoing e.g. Air compressor project which was substantially completed in 2013.	
Energy Efficiency/Utility conservation	Monitoring of raw materials	90	Monthly task for review of raw materials and process efficiency created.	Operations manager	New report issued monthly to control room and allows trending of resource use. Review use 2014	
Reduction of emissions to Water	Improve quality analytical monitoring of emissions from the Waste Water Treatment Plant in line with EPA and quality requirements.	95	Progress against EPA guidelines and attended EPA Webinar 2013. EPA inspection 2013 corrective actions made further improvements.	EHS Specialist	Increased compliance with licence conditions. Quality manual in use and used for ISO 14001. Inter lab testing and deviations procedure to be updated to quality manual 2014.	
Reduction of emissions to Air	CEMs spares parts - review recommended list and keep available on site.	60	Review list of recommended spare parts and operational experience - recommended list sent for approval to customer.	Maintenance Manager	Spare parts agreed to be purchases q2/q3 2014	
Reduction of emissions to Air	Continue refresher training of the operations team on installation of portable CEMS analyser and basic front line maintenance.	100	Training complete by ECI specialist again in 2013	Maintenance Manager	Increased compliance with licence conditions, 2013 refresher training included calibrations training and now linked to city&guilds operator programme	
Reduction of emissions to Air	Update CEMS quality procedures in line with EPA AG3 and EPA guidance documents.	10	Project ongoing.	Maintenance Manager	High level of compliance achieved 2013 and on EPA inspection. Quality document/manuals to continue for 2014 in line with EPA guidelines e.g. 2013 EPA webinar	
Reduction of emissions to Wastewater	Implement mechanical seals on demin. pumps	80	Identified pumps where glands could be replaced by mechanical seals to save water usage.	Maintenance Manager	Water usage reduction.	
Reduction of emissions to Wastewater	Standardise test method for water use 'drop test' and benchmark against other similar plants	30	Monthly calendar task created. However difficult to assess and complete water drop tests in 2013 due to low running regime.	Water reduction team	New task and tracking of water drop tests when possible. Plan to standardised method in procedure and review results with action plan 2014. Some initial benchmarking to other sites completed.	
Reduction of emissions to Wastewater	Raise awareness on site towards water conservation.	40	Some tasks in calendar to measure water use and some projects completed.	Water reduction team	Water is monitored monthly at different locations and some projects were completed (e.g. contractor toilet block) to reduce water use. Further awareness planned for 2014.	

Noise

Noise monitoring summary report

Lic No: P0700-02

Year

2013

1 Was noise monitoring a licence requirement for the AER period?

Yes

If yes please fill in table N1 noise summary below

2 Was noise monitoring carried out using the EPA Guidance note, including completion of the "Checklist for noise measurement report" included in the guidance note as table 6?

Noise
Guidance
note NG4

Yes

3 Does your site have a noise reduction plan

No

4 When was the noise reduction plan last updated?

not applicable

5 Have there been changes relevant to site noise emissions (e.g. plant or operational changes) since the last noise survey?

No

Table N1: Noise monitoring summary

Date of monitoring	Time period	Noise location (on site)	Noise sensitive location -NSL (if applicable)	LA _{eq}	LA ₉₀	LA ₁₀	LA _{max}	Tonal or Impulsive noise* (Y/N)	If tonal /impulsive noise was identified was 5dB penalty applied?	Comments (ex. main noise sources on site, & extraneous noise ex. road traffic)	Is <u>site</u> compliant with noise limits (day/evening/night)?
11/11/2013	30min	SW of Site	NSL1	61.9	37.7	57.9	86.8	No	N/A	Traffic Noise	Yes
11/11/2013	30min	SW of Site	NSL1	57.4	37.3	42.7	83.8	No	N/A	Traffic Noise	Yes
11/11/2013	30min	SW of Site	NSL1	40.7	38.9	41.6	61.2	No	N/A	Traffic Noise	Yes
11/11/2013	30min	NE of Site	NSL2	50	35.9	50.7	86.6	No	N/A	Traffic / Barking Dog	Yes
11/11/2013	30min	NE of Site	NSL2	45.9	34.4	40.1	71.9	No	N/A	Traffic / Barking Dog	Yes
11/11/2013	30min	NE of Site	NSL2	43.9	35.1	49.3	56.8	No	N/A	Traffic / Barking Dog	Yes

*Please ensure that a tonal analysis has been carried out as per guidance note NG4. These records must be maintained onsite for future inspection

If noise limits exceeded as a result of noise attributed to site activities, please choose the corrective action from the following options?

N/A

Resource Usage / Energy Efficiency

Resource Usage/Energy efficiency summary

Lic No:

P0700-02

Year

2013

When did the site carry out the most recent energy efficiency audit? Please list the recommendations in table 3 below

1

Is the site a member of any accredited programmes for reducing energy usage/water conservation such as the SEAI programme linked to the right? If yes please list them in additional information

[SEAI - Large Industry Energy Network \(LIEN\)](#)

Additional information

18/11/2013	
Yes	Site is member of government led Greenbusiness.ie initiative and has had independent resource efficiency audits on site. It also submits monthly data to SEI.
Yes	0.1

2

Where Fuel Oil is used in boilers on site is the sulphur content compliant with licence conditions? Please state percentage in additional information

3

Table R1 Energy usage on site					
Energy Use	Previous year	Current year	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Comment
Total Energy Used (MWHrs)	1,364,673	844,140		+0.81%	The methodology has been revised compared to 2012 and we believe this is a more representative way of reporting the plant energy usage. The total energy used is now the combined energy from all inputs i.e. Electrical, Natural Gas and Gasoil. 2012 figure for total energy use value has been updated to align with current methodology. Presumably this was always the intent but was incorrectly interpreted in previous years.
Total Energy Generated (MWHrs)	696,379	427,284	-38.6%		
Total Renewable Energy Generated (MWHrs)	N/A	N/A			
Electricity Consumption (MWHrs)	29,864	22,989			
Fossil Fuels Consumption:	N/A	N/A			
Heavy Fuel Oil (m3)	N/A	N/A			
Light Fuel Oil (m3)	374,000	37,995			
Natural gas (m3)	127,461,818	77,930,162			
Coal/Solid fuel (metric tonnes)	N/A	N/A			
Peat (metric tonnes)	N/A	N/A			
Renewable Biomass	N/A	N/A			
Renewable energy generated on site	N/A	N/A			

* where consumption of energy can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R2 Water usage on site			Water Emissions			Water Consumption	
Water use	Water extracted Previous year m3/yr.	Water extracted Current year m3/yr.	Production +/- % compared to previous reporting year**	Energy Consumption +/- % vs overall site production*	Volume Discharged back to environment(m³/yr):	Volume used i.e. not discharged to environment e.g. released as steam m3/yr	Unaccounted for Water:
Groundwater	53,041	32,669	-38.41	N/A	31,400	1,269	
Surface water	N/A						
Public supply	N/A						
Recycled water	N/A						
Total	53,041	32,669					

* where consumption of water can be compared to overall site production please enter this information as percentage increase or decrease compared to the previous reporting year.

** where site production information is available please enter percentage increase or decrease compared to previous year

Table R3 Waste Stream Summary					
	Total	Landfill	Incineration	Recycled	Other
Hazardous (Tonnes)	45.867	0	0	18.254	27.613
Non-Hazardous (Tonnes)	104.693	0	0	49.113	55.58

Resource Usage/Energy efficiency summary

Lic No: P0700-02

Year

2013

Table R4: Energy Audit finding recommendations								
Date of audit	Recommendations	Description of Measures proposed	Origin of measures	Predicted energy savings %	Implementation date	Responsibility	Completion date	Status and comments
18-Nov-13	8.1 Measure Air leak	Carry out air leakage tests on site air system and equipment and repair any leaks greater than 10%	energy audit	19%	31-Nov-2014	Trevor Greally		To be completed by end of Q4
18-Nov-13	8.2 Staff Training	Raise energy awareness and focus among site personnel through training	energy audit	7%	31-Aug-14	Enda Fox		To be completed by end of Q4
18-Nov-13	8.3 Replace water cooled air compressor with air cooled compressor	New air compressor to be fitted to allow main 300KW water compressor to be turned off when not in use	energy audit	5%		Trevor Greally	21-Feb-14	Completed
18-Nov-13	8.4 Upgrade lamps and controls in Administration building	Replace existing Metal Halide and Halogen fitting with energy efficient led fittings	energy audit	70%	31-Jul-14	Enda Fox		To be completed by end of Q3
18-Nov-13	8.5 Review policy of motor rewinds	Investigate current policy with recommended policy of replacing failed motors with Eff1 motors compared to rewinding motors	energy audit	3%	15-May-14	Enda Fox		To be completed by end of Q2
18-Nov-13	8.6 Upgrade lamps and controls in Power house building	Replace existing Metal Halide and Son fittings with energy efficient 80 watt led bulbs	energy audit	80%	N/A - Will be replaced as bulbs fail - expect full replacement will take a number of years to complete.	Enda Fox		Ongoing requirement

Resource Usage/Energy efficiency summary

Lic No:

P0700-02

Year

2013

Table R5: Power Generation: Where power is generated onsite (e.g. power generation facilities/food and drink industry)please complete the following information

	Unit ID	Unit ID	Unit ID	Unit ID	Station Total
Technology	CCGT				
Primary Fuel	Natural Gas				
Thermal Efficiency (Base Load)	55.10%				
Unit Date of Commission	29/03/2006				
Total Starts for year	39				
Total Running Time	1,520.1				
Total Electricity Generated (GWH)	427,284				
House Load (GWH)	22.99				
KWH per Litre of Process Water	0.763				
KWH per Litre of Total Water used on Site	0.704				

Complaints – incidents.

Complaints and Incidents summary template	Lic No:	P0xxx-01	Year	2013
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Complaints		Additional information	
Have you received any environmental complaints in the current reporting year? If yes please complete summary details of complaints received on site in table 1 below		No	

Table 1 Complaints summary							
Date	Category	Other type (please specify)	Brief description of complaint (Free txt <20 words)	Corrective action< 20 words	Resolution status	Resolution date	Further information
	SELECT				SELECT		
Total complaints open at start of reporting year		0					
Total new complaints received during reporting year		0					
Total complaints closed during reporting year		0					
Balance of complaints end of reporting year		0					

Incidents		Additional information	
Have any incidents occurred on site in the current reporting year? Please list all incidents for current reporting year in Table 2 below		No	
*For information on how to report and what constitutes an incident		What is an incident	

Table 2 Incidents summary														
Date of occurrence	Incident nature	Location of occurrence	Incident category* please refer to guidance	Receptor	Cause of incident	Other cause(please specify)	Activity in progress at time of incident	Communication	Occurrence	Corrective action<20 words	Preventative action <20 words	Resolution status	Resolution date	Likelihood of reoccurrence
	SELECT	SELECT	SELECT	SELECT	SELECT		SELECT	SELECT	SELECT			SELECT		SELECT
Total number of incidents current year		0												
Total number of incidents previous year		0												
% reduction/ increase		0												

Waste - PRTR

[Guidance to completing the PRTR workbook](#)

AER Returns Workbook

Version 1.1.17

REFERENCE YEAR	2013
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1. FACILITY IDENTIFICATION

Parent Company Name	Tynagh Energy Limited
Facility Name	Tynagh Energy Limited
PRTR Identification Number	P0700
Licence Number	P0700-02

Waste or IPPC Classes of Activity

No.	class_name
2.1	The operation of combustion installations with a rated thermal input equal to or greater than 50MW

Address 1	PM Group
Address 2	Killakee House
Address 3	Belgard Square, Tallaght
Address 4	Dublin 24
	Galway
Country	Ireland
Coordinates of Location	-8.38215 53.1666
River Basin District	IEGBNISH
NACE Code	3511
Main Economic Activity	Production of electricity
AER Returns Contact Name	Colin Darcy
AER Returns Contact Email Address	c.darcy@tynaghenergy.ie
AER Returns Contact Position	Technical Manager
AER Returns Contact Telephone Number	0909 745670
AER Returns Contact Mobile Phone Number	0877829640
AER Returns Contact Fax Number	0909 745752
Production Volume	10435.83
Production Volume Units	Megawatt hours generated by powerplant
Number of Installations	1
Number of Operating Hours in Year	8760
Number of Employees	31
User Feedback/Comments	The correct address is : Tynagh Power Station, Derryfrench, Loughrea, Co. Galway
Web Address	http://www.tynaghenergy.ie/

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
1(c)	Thermal power stations and other combustion installations

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

[Guidance on waste imported/accepted onto site](#)

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	No
--	----

4.1 RELEASES TO AIR

[Link to previous years emissions data](#)

| PRTR# : P0700 | Facility Name : Tynagh Energy Limited | Filename : P0700_2013.xls | Return Year : 2013 |

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

POLLUTANT		RELEASES TO AIR			Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
03	Carbon dioxide (CO2)	C	ETS	EN 15058:2004	168661567.0	168661567.0	0.0	0.0
02	Carbon monoxide (CO)	M	EN 15058:2004	EN 15058:2004 Guidance for combustion activities on pollution inventory reporting, Environment Agency (uk), version 4, Jan 2013	162765.6	162765.6	0.0	0.0
01	Methane (CH4)	E	ESTIMATE	EN 14792:2005	10930.68	10930.68	0.0	0.0
08	Nitrogen oxides (NOx/NO2)	M	EN 14792:2005	EN 14792:2005 Guidance for combustion activities on pollution inventory reporting, Environment Agency (uk), version 4, Jan 2013	77335.64	77335.64	0.0	0.0
07	Non-methane volatile organic compounds (NMVOC)	E	ESTIMATE	EN 14792:2005	2658.81	2658.81	0.0	0.0
05	Nitrous oxide (N2O)	E	ESTIMATE	EN 14792:2005	1327.12	1327.12	0.0	0.0
11	Sulphur oxides (SOx/SO2)	M	ISO 7935: 1992	ISO 7935: 1992	4778.71	4778.71	0.0	0.0
10	Sulphur hexafluoride (SF6)	E	ESTIMATE	ESTIMATE	0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

POLLUTANT		RELEASES TO AIR			Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

POLLUTANT		RELEASES TO AIR			Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

4.2 RELEASES TO WATERS

[Link to previous years emissions data](#)

[PRTR# : P0700 | Facility Name : Tynagh Energy Limited | Filename : P0700_2013.xls | Return Year : 2013]

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SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this or

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Method Used	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
12	Total nitrogen	M	OTH	Based on ISO17025 standard nessler method for Ammonia as Nitrogen. Ammonia as N used instead of Total Nitrogen	5.4	5.4	0.0	0.0
13	Total phosphorus	M	OTH	hach test kit method similar to ISO 6878.	1.1	1.1	0.0	0.0
76	Total organic carbon (TOC) (as total C or COD/3)	M	OTH	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	97.8	97.8	0.0	0.0
79	Chlorides (as Cl)	M	OTH	EPA Methods 325.1 & 325.2,	1262.9	1262.9	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Method Used	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS					Please enter all quantities in this section in KGs			
POLLUTANT					QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Method Used	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : P0700 | Facility Name : Tynagh Energy Limited | Filename : P0700_2013.xls | Return Year

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SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			QUANTITY			
Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

| PRTR# : P0700 | Facility Name : Tynagh Energy Limited | Filename : P0700_2013.xls | Return Year : 2013 |

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Please enter all quantities on this sheet in Tonnes

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Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Haz Waste : Name and Licence/Permit No of Recover/Disposer	Non	Haz Waste : Address of Next Destination Facility Non Haz Waste : Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used						
To Other Countries	08 01 11	Yes	0.136	waste paint and varnish containing organic solvents or other dangerous substances	R1	M	Weighed	Abroad	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Kr ombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany
To Other Countries	08 04 09	Yes	0.063	waste adhesives and sealants containing organic solvents or other dangerous substances	R1	M	Weighed	Abroad	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Kr ombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany
Within the Country	06 01 02	Yes	1.36	hydrochloric acid waste washings (dilute)	D9	M	Weighed	Offsite in Ireland	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Envia Ireland Ltd,184-1,Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland	Smithtown Industrial Estate,,Shannon,Co. Clare,Ireland
Within the Country	13 02 08	Yes	9.45	other engine, gear and lubricating oils including oil and water mixtures	R9	C	Volume Calculation	Offsite in Ireland	Envia Ireland Ltd,184-1		Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland	Envia Ireland Ltd,W0041-01,Smithtown Industrial Estate,,Shannon,Co. Clare,Ireland	Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland
Within the Country	14 06 03	Yes	0.489	other solvents and solvent mixtures. Coolant from diesel generator.	D9	M	Weighed	Offsite in Ireland	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Envia Ireland Ltd,W0041-01,Smithtown Industrial Estate,,Shannon,Co. Clare,Ireland	Smithtown Industrial Estate,,Shannon,Co. Clare,Ireland
Within the Country	16 03 03	Yes	0.728	inorganic wastes containing dangerous substances. Nalco Nalmet	D9	M	Weighed	Offsite in Ireland	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Envia Ireland Ltd,W0041-01,Smithtown Industrial Estate,,Shannon,Co. Clare,Ireland	Smithtown Industrial Estate,,Shannon,Co. Clare,Ireland
Within the Country	15 01 03	No	2.06	wooden packaging	R3	M	Weighed	Offsite in Ireland	Walsh Waste Ltd ,WFP-G-10-0003-01		Cahercormick,,Craughwell,,Ireland		
Within the Country	15 01 06	No	2.97	mixed packaging	R3	C	Volume Calculation	Offsite in Ireland	Walsh Waste Ltd ,WFP-G-10-0003-01		Cahercormick,,Craughwell,,Ireland		
Within the Country	15 01 10	Yes	0.045	packaging containing residues of or contaminated by dangerous substances. Empty oil drums	R3	M	Weighed	Offsite in Ireland	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Envia Ireland Ltd,184-1,Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland	Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland
To Other Countries	15 02 02	Yes	2.923	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R1	M	Weighed	Abroad	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Kr ombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany
Within the Country	16 05 04	Yes	0.037	gases in pressure containers (including halons) containing dangerous substances. Aerosol cans.	R4	M	Weighed	Offsite in Ireland	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Envia Ireland Ltd,184-1,Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland	Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland
To Other Countries	16 05 06	Yes	1.424	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	R1	M	Weighed	Abroad	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Kr ombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany
Within the Country	16 10 01	Yes	24.93	aqueous liquid wastes containing dangerous substances. Turbine blade wash effluent and stack drains waste.	D9	M	Weighed	Offsite in Ireland	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Envia Ireland Ltd,W0041-01,Smithtown Industrial Estate,,Shannon,Co. Clare,Ireland	Smithtown Industrial Estate,,Shannon,Co. Clare,Ireland
Within the Country	17 04 07	No	3.82	mixed metals	R4	M	Weighed	Offsite in Ireland	Walsh Waste Ltd ,WFP-G-10-0003-01		Cahercormick,,Craughwell,,Ireland		
To Other Countries	16 03 05	Yes	1.055	organic wastes containing dangerous substances. GE Solisep	R1	M	Weighed	Abroad	Envia Ireland Ltd,W0041-01		Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Kr ombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany

Within the Country	16 07 09	Yes	wastes containing other dangerous substances. Waste from bund cleaning.	D9	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,W0041-01 Walsh Waste Ltd ,WFP-G-10-0003-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Enva Ireland Ltd,W0041-01,Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland
Within the Country	20 02 01	No	1.34 biodegradable waste. Food waste	R3	M	Weighed	Offsite in Ireland	Walsh Waste Ltd ,WFP-G-10-0003-01	Cahercormick,,Craughwell,,Ireland		
Within the Country	20 03 99	No	5.94 municipal wastes not otherwise specified	R1	M	Weighed	Offsite in Ireland	Walsh Waste Ltd ,WFP-G-10-0003-01	Cahercormick,,Craughwell,,Ireland		
Within the Country	18 01 03	Yes	wastes whose collection and disposal is subject to special requirements in order to prevent infection. Waste from first aid treatments and Hepatitis vaccinations.	D9	E	Weighed	Offsite in Ireland	SRCL Ireland Ltd,W055-02	430 Beech Road,Western Industrial Estate,Dublin,Dublin 12,Ireland	SRCL Ireland Ltd,W055-02,430 Beech Road,Western Industrial Estate,Dublin,Dublin 12,Ireland	430 Beech Road,Western Industrial Estate,Dublin,Dublin 12,Ireland
To Other Countries	16 05 07	Yes	discarded inorganic chemicals consisting of or containing dangerous substances. Water Chemistry deionisers	R1	M	Weighed	Abroad	Enva Ireland Ltd,W0041-01 Walsh Waste Ltd ,WFP-G-10-0003-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Krombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany
Within the Country	15 01 01	No	1.78 paper and cardboard packaging	R3	M	Weighed	Offsite in Ireland	Walsh Waste Ltd ,WFP-G-10-0003-01	Cahercormick,,Craughwell,,Ireland		
Within the Country	20 03 06	No	18.5 waste from sewage cleaning	R3	M	Volume Calculation	Offsite in Ireland	Walsh Waste Ltd ,WFP-G-10-0003-01	Cahercormick,,Craughwell,,Ireland		
Within the Country	16 06 04	No	0.183 alkaline batteries (except 16 06 03)	R4	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland		
Within the Country	16 02 13	Yes	discarded equipment containing hazardous components (16) other than those mentioned in 16 02 09 to 16 02 12. Waste electrical and electronic equipment.	R4	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	KMK Metal Recycling Ltd,W0113-04,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland
Within the Country	16 06 01	Yes	0.282 lead batteries	R4	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Enva Ireland Ltd,184-1,Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland	Clonminam Industrial Estate,,Portlaoise,Co. Laois,Ireland
Within the Country	20 01 21	Yes	fluorescent tubes and other mercury-containing waste	R4	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Irish Lamp Recycling Ltd,WFP-KE-08-0348-01,Woodstock Industrial Estate,,Athy,Co. Kildare,Ireland	Woodstock Industrial Estate,,Athy,Co. Kildare,Ireland
Within the Country	17 04 07	No	12.52 contained metal parts. aqueous liquid wastes other than those mentioned in 16 10 01. Sludge from cleanout of pit in Waste Water Treatment Plant.	R5	M	Weighed	Offsite in Ireland	Walsh Waste Ltd ,WFP-G-10-0003-01	Cahercormick,,Craughwell,,Ireland		
Within the Country	16 10 02	No	55.58 Plant.	D9	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,W0196-01	JFK Road,JFK Industrial Estate,Nangor Road,Dublin 12,Ireland		
To Other Countries	14 06 03	Yes	other solvents and solvent mixtures. Coolant from diesel generator.	R1	M	Weighed	Abroad	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Krombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany
To Other Countries	15 01 10	Yes	packaging containing residues of or contaminated by dangerous substances. Empty plastic drum which contained Chemclor tablets.	R1	M	Weighed	Abroad	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Krombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany
Within the Country	15 01 10	Yes	packaging containing residues of or contaminated by dangerous substances. Empty IBCs	R3	M	Weighed	Offsite in Ireland	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Enva Ireland Ltd,W0041-01,Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland
To Other Countries	16 05 06	Yes	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	R13	M	Weighed	Abroad	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Krombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany
To Other Countries	12 01 16	Yes	waste blasting material containing dangerous substances. Used shot blast grit.	R13	M	Weighed	Abroad	Enva Ireland Ltd,W0041-01	Smithstown Industrial Estate,,Shannon,Co. Clare,Ireland	Lindenschmidt KG Umweltservice,471498089,Krombacher Strasse,42-46,Kreuztal,57223,Germany	Krombacher Strasse,42-46,Kreuztal,57223,Germany

