Environmental Protection Agency

National Inspection Plan

Domestic Waste Water Treatment Systems

2017 - 2018

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

Regulation: *We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

Knowledge: *We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.*

Advocacy: *We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.*

Our Responsibilities

Licensing

We regulate the following activities so that they do not endanger human health or harm the environment:

- waste facilities (*e.g. landfills, incinerators, waste transfer stations*);
- large scale industrial activities (*e.g. pharmaceutical, cement manufacturing, power plants*);
- intensive agriculture (*e.g. pigs, poultry*);
- the contained use and controlled release of Genetically Modified Organisms (*GMOs*);
- sources of ionising radiation (*e.g. x-ray and radiotherapy equipment, industrial sources*);
- large petrol storage facilities;
- waste water discharges;
- dumping at sea activities.

National Environmental Enforcement

- Conducting an annual programme of audits and visits of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by coordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

Water Management

- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

Monitoring, Analysing and Reporting on the Environment

- Monitoring air quality and implementing the EU Clean Air for Europe (CAFÉ) Directive.
- Independent reporting to inform decision making by national and local government (*e.g. periodic reporting on the State of Ireland's Environment and Indicator Reports*).

Regulating Ireland's Greenhouse Gas Emissions

- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

Environmental Research and Development

- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

Strategic Environmental Assessment

- Assessing the impact of proposed plans and programmes on the Irish environment (*e.g. major development plans*).

Radiological Protection

- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

Guidance, Accessible Information and Education

- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making (*e.g. My Local Environment, Radon Maps*).
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

Awareness Raising and Behavioural Change

- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

Management and Structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiological Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.

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An Ghníomhaireacht um Chaomhnú Comhshaoil

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Summary & Key Findings

Domestic waste water treatment systems

- Domestic waste water treatment systems (DWWTS) are used by rural householders to treat sewage
- There are nearly half a million systems in Ireland and most (90%) are septic tanks

Risks

- DWWTS can contaminate household wells with harmful bacteria and viruses if not built and operated properly
- Excessive releases of nitrogen and phosphorus can pollute rivers, lakes and coastal waters

Inspections

- Local authorities inspect over 1,000 systems each year
- Nearly half fail inspection, because they are not built properly and are not maintained
- Nearly one-third of systems that failed are still not fixed, many of these were inspected in 2017 or earlier

Action required by householders

- Ensure their systems are properly built and maintained
- Fix systems that fail inspection
- Ensure their sewage does not pollute their well

Action required by local authorities

- Take appropriate measures to ensure householders fix systems that fail inspection
- Continue public engagement to encourage good practice

1. Introduction

This report is about domestic waste water treatment systems (DWWTS). There are nearly half a million of these in Ireland. They are used by rural householders to treat sewage and other effluent. Most (90%) are simple septic tank systems; the others are more advanced packaged/filter treatment systems. This report is based on the findings of inspections by local authorities under the national DWWTS inspection plan.

2. How does a DWWTS work?

Domestic waste water from toilets, sinks, showers, washing machines and dishwashers goes to the septic tank or packaged/filter system. The solids settle out, forming a sludge which needs to be cleaned over time to prevent blockage. The waste water may be treated further in packaged/filter systems. The waste water is then distributed to the soil through a series of shallow underground pipes. This provides natural treatment as the waste water percolates through the soil, where it can reach groundwater below. This may be the same groundwater that supplies your or your neighbour's well.

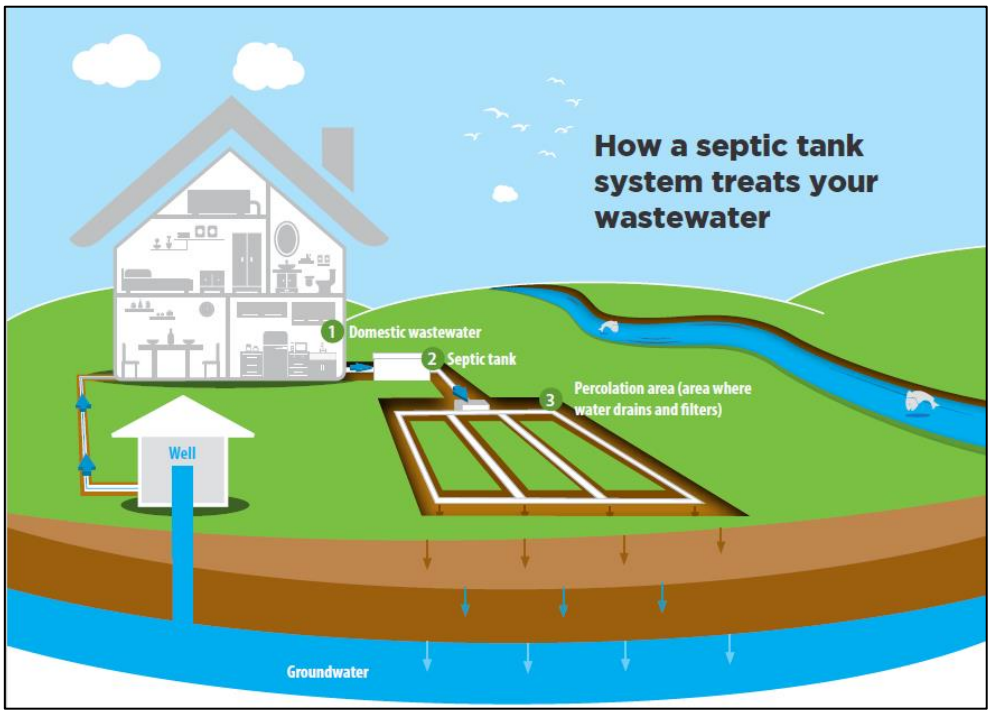

Figure 1 How a septic tank treats your waste water

3. What are the risks from my DWWTS?

DWWTS are a risk to human health and the environment if they are not constructed and maintained properly.

Human health

Sewage from DWWTS can contaminate household wells with harmful bacteria and viruses. There are about 165,000 households that have both a DWWTS and a well. Studies have found frequent occurrences of bacteria in groundwater and household wells[1]. Infants, pregnant women, the elderly or those with pre-existing health conditions are particularly vulnerable.

Direct exposure to waste water is also a risk if it is not discharged properly to ground, for example overflows, leaks, ponding and discharges to ditches and streams.

Figure 2 Septic tank pollution

Environment

Poorly treated sewage may contain excessive amounts of phosphorus and nitrogen which can pollute rivers, lakes and coastal waters. DWWTS have been identified as a pressure on water bodies (stretches of rivers) at risk of pollution[2].

[1] Environmental Protection Agency (2018) *Water Quality in 2017: An Indicators Report*; Gill *et al*. (2018) *The Impact of On-Site Domestic Wastewater Effluent on Rivers and Wells (2012-W-MS-12) EPA Research Report No. 251; Hynds et al. (2012) Development of a microbial contamination susceptibility model for private domestic groundwater sources.* Water Resources Research 48: 1–13;

[2] Department of Housing, Planning and Local Government (2018) *River Basin Management Plan for Ireland | 2018 – 2021*.

4. Local authority inspections

The National Inspection Plan for DWWTS which requires local authorities to inspect a minimum of 1,000 DWWTS a year across Ireland, with the greatest proportion in areas at higher risk of contamination. There were 2,371 inspections in 2017-2018. You can find details of inspections in Appendices A and B.

The main findings from the inspections are:

- nearly half (1,135) of systems didn't meet the necessary standards in 2017- 2018;
- failures are due to construction defects and householders not maintaining/cleaning out (de-sludging) systems;
- defects gave rise to:
    - leaks of sewage from systems
    - ponding of sewage on the ground
    - discharges to ditches and streams
    - rainwater entering systems

Nearly one-third (852) of systems that failed during 2013–2018 are still not fixed, 474 of those date from inspections in 2017 or earlier. i.e. the issue is unresolved for more than one year.

There is significant variation in resolving issues across local authority areas. The EPA audited DWWTS inspection practices at three local authorities. One local authority had a good inspection system in place, while two local authorities needed to make improvements.

Local authorities took legal proceedings in 12 cases for failing to comply with requirements to fix systems.

5. What do householders need to do?

Householders should ensure their DWWTS is properly built and maintained so that their sewage is properly treated to prevent risk to human health, the environment and to comply with legislation.

As a priority, householders should ensure:

- there are no leaks or ponding on the ground
- there is no sewage going to ditches and streams
- the system is cleaned out (de-sludged) at appropriate intervals
- their well is tested to ensure that the water is safe to drink

Figure 3 Septic tank ponding at the surface

It is a legal requirement that householders comply with notices to fix systems that fail inspection. The works required may qualify for a grant (Section 7 below).

You can find further information from the following leaflets available online:

http://www.epa.ie/pubs/advice/water/wastewater/SS%20Septic%20Web.pdf

http://www.epa.ie/pubs/advice/drinkingwater/SS%20Wells%20Web.pdf

Figure 4 Information leaflets for householders

6. What do local authorities need to do?

Local authorities must continue to complete their inspections under the National Inspection Plan.

Local authorities need to have an effective enforcement system in place to ensure householders fix systems that fail inspection. Leaks, ponding and discharges to ditches and streams should be addressed as a priority as these pose a risk to human health and the environment.

Local authorities should continue to engage with the public as an essential element to encourage householders to ensure their DWWTSs are constructed and maintained properly. Information for this purpose is available online and in leaflets (Appendix C).

7. Grants

There has been a grant scheme in place since 2013 for structural remedial works on DWWTS that fail inspection under the National Inspection Plan. You can find information on that grant scheme including eligibility, amounts and application forms at:

http://www.housing.gov.ie/water/water-quality/domestic-waste-water-systemsseptic-tanks/domestic-waste-water-treatment-1

The Minister for Housing, Planning and Local Government has announced an expanded grant scheme for septic tanks to be launched in 2019. The revised scheme:

- Continues to provide grant aid for DWWTS that fail under the National Inspection Plan.
- Removes the means test requirement and increases the maximum grant available to €5,000.
- Is being expanded to support achieving water quality objectives under the River Basin Management Plan 2018 – 2021.

The River Basin Management Plan 2018 – 2021 sets out the actions that Ireland will take to protect and improve our rivers, lakes and coastal areas. Specialist local authority teams are carrying out scientific assessments of waters in priority areas and will identify DWWTS requiring improvements to address water quality issues. These assessments are in addition to the 1,000 inspections under the National Inspection Plan.

There is also a grant scheme for improvements to household wells and you can find information at:

https://www.housing.gov.ie/water/water-services/rural-water-programme/grant-provision-or-neccessary-improvment-individual-water

Appendix A: DWWTS inspection findings

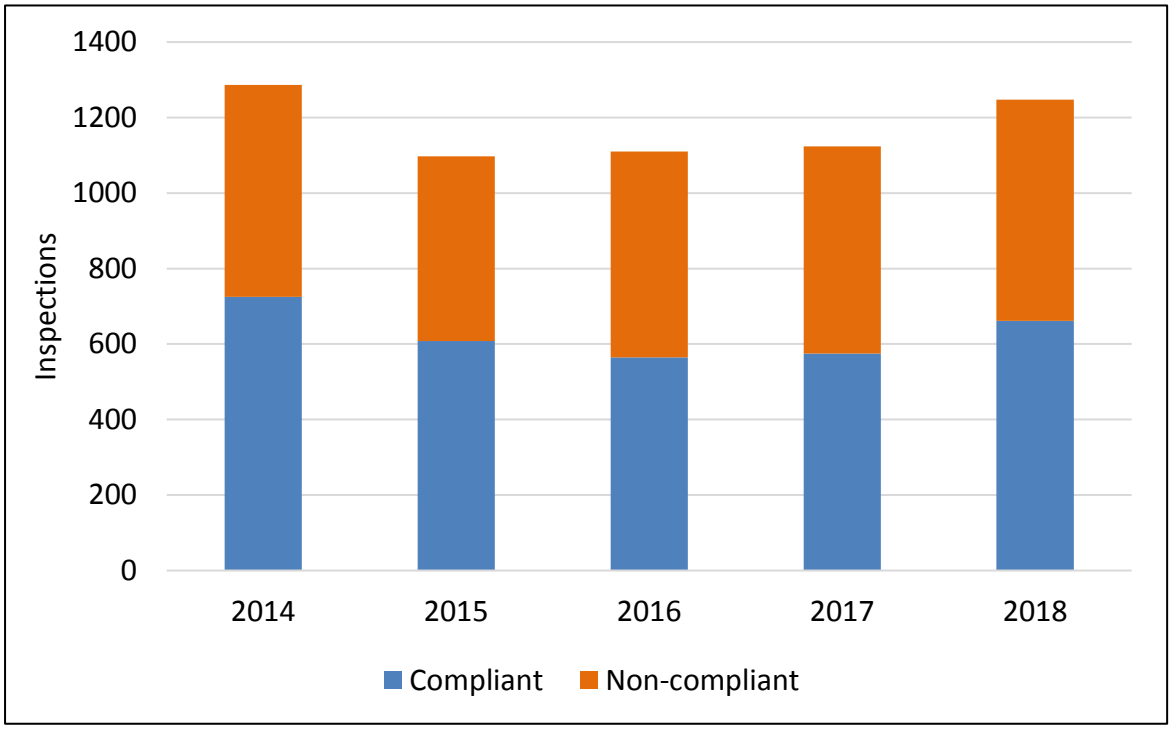

Figure A.1 Summary of inspection findings 2014–2018

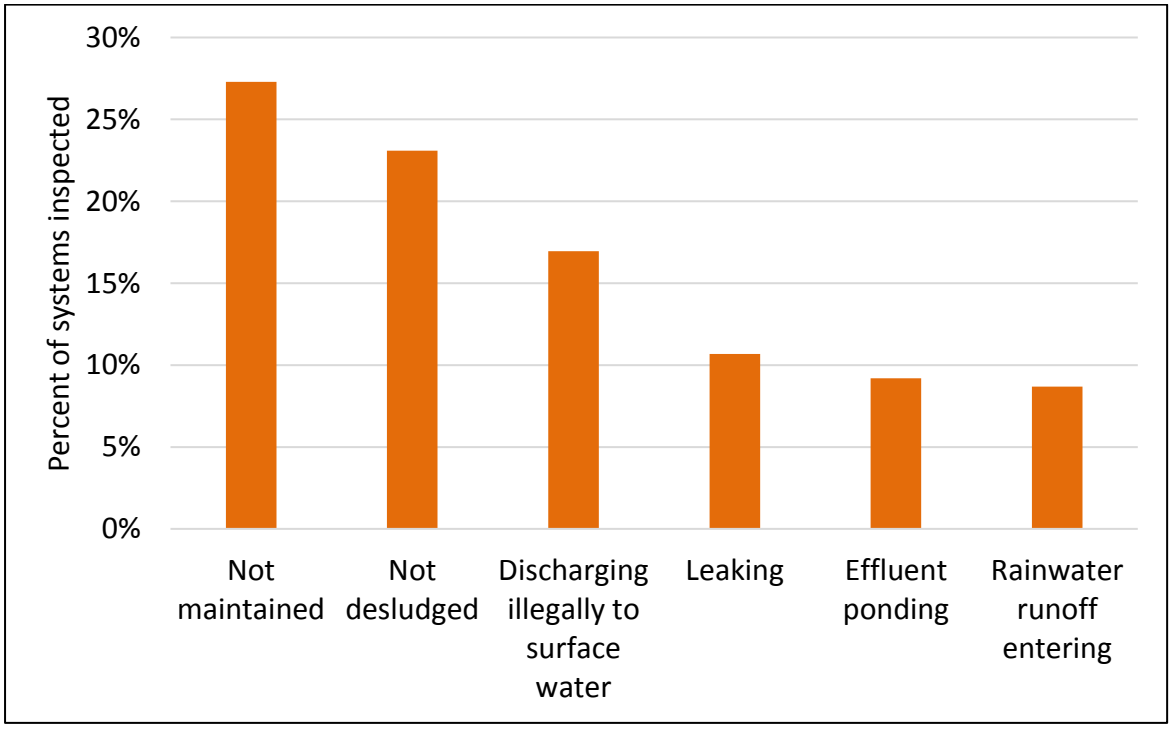

Figure A.2 Reasons for DWWTS failures 2017-2018 (individual systems may have multiple failures)

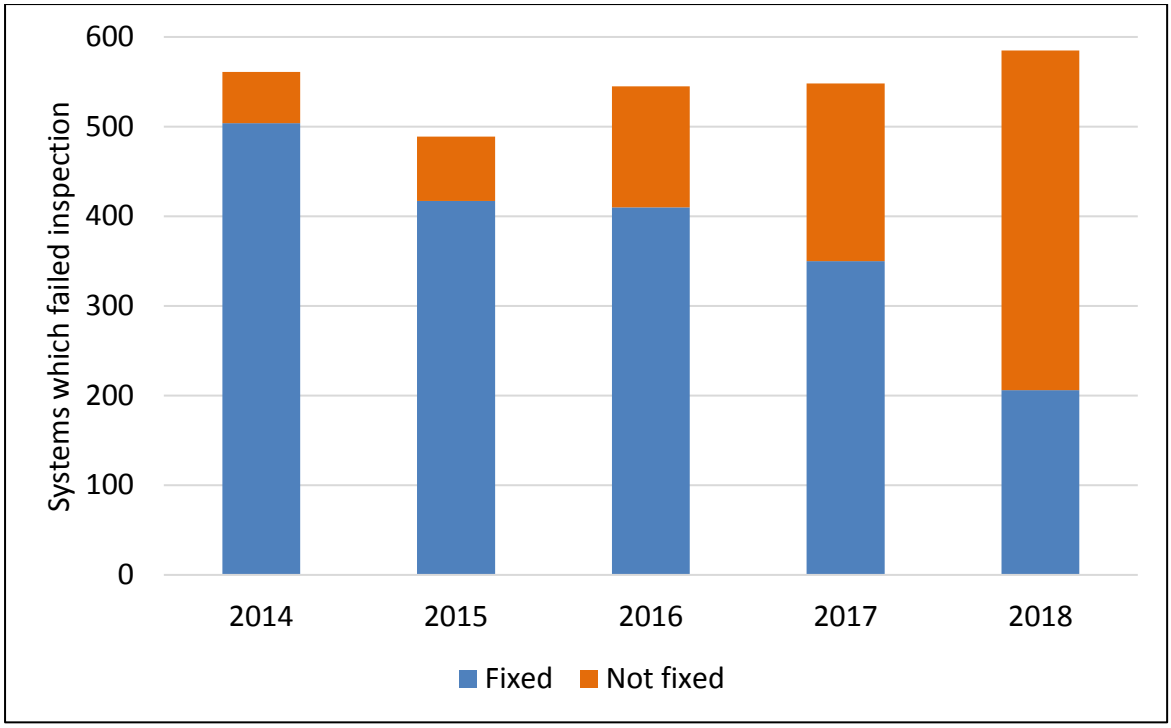

Figure A.3 DWWTS failures 2014-2018 (as of 26/03/2019)

Appendix B: Inspection findings by local authority area (ranked by percentage of failing systems fixed)

	Inspections required 2017-2018	Inspections done 2017-2018	Failure rate 2017-2018	Systems failing 2013–2018	Percentage fixed 2013–2018 (as of 26/03/19)
Carlow	26	26	19%	19	100%
Louth	36	35	26%	43	100%
Wicklow	52	58	28%	56	96%
South Dublin	4	9	44%	16	94%
Fingal	20	20	20%	27	93%
Dún Laoghaire Rathdown	2	7	43%	12	92%
Monaghan	55	64	28%	57	91%
Cork County	159	172	49%	289	89%
Longford	23	33	42%	27	89%
Kerry	119	121	52%	174	81%
Wexford	132	302	63%	388	80%
Clare	88	90	48%	109	79%
Cavan	71	75	44%	95	77%
Donegal	213	230	29%	193	77%
Meath	106	118	56%	144	67%
Sligo	54	83	54%	89	67%
Kildare	55	69	38%	44	66%
Tipperary	74	76	47%	86	64%
Kilkenny	59	57	40%	82	62%
Limerick	75	75	52%	161	60%
Mayo	122	169	78%	243	56%
Waterford	37	38	26%	25	56%
Westmeath	33	35	29%	24	54%
Laois	46	50	44%	64	53%
Galway County	192	197	39%	167	49%
Roscommon	63	71	65%	119	48%
Offaly	31	33	48%	40	38%
Leitrim	51	56	63%	89	37%
Galway City	2	2	0%	5	20%
TOTALS	**2,000**	**2,371**	**48%**	**2,887**	**70%**

Appendix C: Information resources

EPA
http://www.epa.ie/water/wastewater/
http://www.epa.ie/water/dw/hhinfo/
http://www.epa.ie/pubs/reports/research/spr/researchreport167guidelines.html
http://www.epa.ie/pubs/reports/research/spr/eparesearchreport167.html

Department of Housing, Planning and Local Government
http://www.housing.gov.ie/water/water-quality/domestic-waste-water-systemsseptic-tanks/domestic-waste-water-treatment-1
https://www.housing.gov.ie/water/water-services/rural-water-programme/grant-provision-or-neccessary-improvment-individual-water

Citizens Information
http://www.citizensinformation.ie/en/housing/owning_a_home/home_owners/domestic_wastewater_treatment.html

Leaflets:

Have you completed a septic tank system check?
https://www.catchments.ie/download/septic-tank-system-check/
Wastewater systems for building a house
http://www.epa.ie/pubs/advice/water/wastewater/wastewatersystemsforbuildingahouse.html
Wastewater systems when buying or selling a house
http://www.epa.ie/pubs/advice/water/wastewater/septictankswastewatersystemswhenbuyingorsellingahouse.html
How to safely spread sludge from your septic tank
http://www.epa.ie/pubs/advice/water/wastewater/howtosafelyspreadsludgefromyourseptictank.html
Have you checked your well water supply?
http://www.epa.ie/pubs/advice/drinkingwater/SS%20Wells%20Web.pdf

National Federation of Group Water Schemes
https://nfgws.ie/nfgws-epa-joint-project/

AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

Tá an Ghníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaol a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ó éifeachtaí díobhálacha na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialú: *Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun díriú orthu siúd nach gcloíonn leis na córais sin.*

Eolas: *Soláthraímid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírithe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.*

Tacaíocht: Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaol atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaol inbhuanaithe.

Ár bhFreagrachtaí

Ceadúnú

- Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaol:
- saoráidí dramhaíola (*m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola*);
- gníomhaíochtaí tionsclaíocha ar scála mór (*m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta*);
- an diantalmhaíocht (*m.sh. muca, éanlaith*);
- úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe (*OGM*);
- foinsí radaíochta ianúcháin (*m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha*);
- áiseanna móra stórála peitril;
- scardadh dramhuisce;
- gníomhaíochtaí dumpála ar farraige.

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
- Obair le húdaráis áitiúla agus le gníomhaireachtaí eile chun dul i ngleic le coireanna comhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, trí dhíriú ar chiontóirí, agus trí mhaoirsiú a dhéanamh ar leasúchán.
- Cur i bhfeidhm rialachán ar nós na Rialachán um Dhramhthrealamh Leictreach agus Leictreonach (DTLL), um Shrian ar Shubstaintí Guaiseacha agus na Rialachán um rialú ar shubstaintí a ídíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

Bainistíocht Uisce

- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uiscí idirchriosacha agus cósta na hÉireann, agus screamhuiscí; leibhéil uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

Monatóireacht, Anailís agus Tuairisciú ar an gComhshaol

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus na n-údarás áitiúil (*m.sh. tuairisciú tréimhsiúil ar staid Chomhshaol na hÉireann agus Tuarascálacha ar Tháscairí*).

Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn

- Fardail agus réamh-mheastacháin na hÉireann maidir le gáis cheaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn

Taighde agus Forbairt Comhshaoil

- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

Measúnacht Straitéiseach Timpeallachta

- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaol in Éirinn (*m.sh. mórphleananna forbartha*).

Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta, measúnacht a dhéanamh ar nochtadh mhuintir na hÉireann don radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Faisnéis Inrochtana agus Oideachas

- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Faisnéis thráthúil ar an gcomhshaol ar a bhfuil fáil éasca a chur ar fáil chun rannpháirtíocht an phobail a spreagadh sa chinnteoireacht i ndáil leis an gcomhshaol (*m.sh. Timpeall an Tí, léarscáileanna radóin*).
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramhaíl ghuaiseach a chosc agus a bhainistiú.

Múscailt Feasachta agus Athrú Iompraíochta

- Feasacht chomhshaoil níos fearr a ghiniúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil

Tá an ghníomhaíocht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inmharthanacht Comhshaoil
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Fianaise is Measúnú
- Oifig um Chosaint Radaíochta agus Monatóireachta Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

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