



Irish Sovereign Green Bond

Impact Report 2019



Rialtas na hÉireann
Government of Ireland

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Introduction and summary

This is the second eligible green projects impact report issued in accordance with the Irish Sovereign Green Bonds (“ISGB”) Framework. It details the environmental impact measures connected to the 2019 allocation report.

ISGBs are designed to provide investors with the financial features of a standard Irish government bond combined with sovereign green bond market practices. ISGB proceeds are paid into the Central Fund as with standard government bonds. Amounts raised on foot of ISGBs are allocated against Eligible Green Projects which generate a positive environmental benefit.

In the 2019 Allocation Report, environmental impact indicators are included across six eligible green categories for allocation:

- Built Environment/Energy Efficiency
- Clean Transportation
- Climate Change Adaption
- Environmentally Sustainable Management of Living Natural Resources and Land Use
- Renewable Energy
- Sustainable Water and Wastewater Management

In 2019, €1,969 million was allocated to Eligible Green Projects (see Appendix 1).

The expenditure numbers can generally be traced to the Department of Public Expenditure and Reform’s databank on its website: in the table *net expenditure analysis* by vote. The expenditure numbers in Appendix 1 are copied from the 2019 ISGB Allocation Report and are based on a provisional outturn provided by the Department of Public Expenditure and Reform in its databank in May 2019. These expenditure numbers were subject to finalisation in the *Comptroller and Auditor General’s Appropriation Accounts* in which a further €23.3million of Green expenditure was identified. This has been carried into the 2020 allocations.

Acknowledgements

This Report was produced with the co-operation of Government departments and other State bodies responsible for expenditure and subsidies which are allocated from the proceeds of ISGBs. The Working Group is grateful to the many colleagues who provided information and assistance.

The ISGB Working Group oversees the implementation of the ISGB Framework, including reporting on the allocation of proceeds to Eligible Green Projects. It is comprised of representatives from the National Treasury Management Agency (NTMA), the Department of Public Expenditure and Reform, the Department of Environment, Climate and Communications and the Department of Finance.

Those Government departments and State bodies are as follows¹:

- [Department of Finance](#)
- [Department of Public Expenditure and Reform](#)
- [Department of Housing, Local Government and Heritage](#)
- [Department of Transport](#)
- [Department of Agriculture, Food and the Marine](#)
- [Department of the Environment, Climate and Communications](#)
- [Office of Public Works](#)
- [National Treasury Management Agency](#)

¹ Government Departments and State bodies referenced in this report are as they were organised in June 2021.

Eligible Green Projects Impact Report Year End 2019

The purpose of impact reporting is to assist investors in ISGBs with a better understanding of the possible environmental impacts of the Eligible Green Projects. A number of key impact indicators are provided and, where possible, quantified. However, there are inherent limitations in the data presented.

An important consideration in the estimation of impact indicators is the underlying assumptions. While technical experts aim to make sound and conservative assumptions that are reasonable based on the information available at the time, the actual environmental impact of the projects may diverge from the impacts as quantified in the tables².

Where quantitative indicators were unavailable, qualitative data has been included to demonstrate other valuable impacts. In addition, some programmes also provide social benefits as well as climate related benefits. This report focuses only on the environmental impacts.

Compliance Review by Sustainalytics

Conclusion:

Based on the limited assurance procedures conducted, nothing has come to Sustainalytics' attention that causes us to believe that, in all material respects, the reviewed bond projects, funded through proceeds of Irish Sovereign Green Bonds, are not in conformance with the Use of Proceeds and Reporting Criteria outlined in the Irish Sovereign Green Bonds Framework.

The full compliance review is available at this [link](#).

² *Harmonized Framework for Impact Reporting. The Green Bond Principles. ICMA. December 2020. <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Handbook-Harmonized-Framework-for-Impact-Reporting-December-2020-151220.pdf>*

Built Environment/Energy Efficiency

Environmental Objectives: Climate Change Mitigation

Project/Programme/Scheme	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator			
				Annual energy savings (GigaWatt Hours)	Annual Greenhouse gas emissions reduced/avoided in kilotonnes of CO ₂ equivalent	Number of homes renovated	Number of people who benefited from grants
Sustainable energy programmes, Sustainable Energy Authority of Ireland (SEAI) admin and general expenses	168.6	168.6	100%	572	130	24,777	32,060
Estate regeneration – social housing improvements	47.5	47.5	100%	49.07	11	5,458	na

Total Allocated 2019 to Built Environment/Energy Efficiency

216.0

Figures may not total due to rounding



Other impact indicators and additional Information

- Residential and Commercial Building Energy Ratings published: 95,017
- Number of Homes Renovated: 24,777

SEAI also manages EV grants including the Electric Vehicle Grant Scheme and Vehicle Home Charger Grant Scheme

- Number of Electric Vehicle Grants provided: 4,700
- Value of Electric Vehicle Grants provided: €22.3 million (vehicles + chargers)
- Number of Electric Vehicle Home Charger Grants provided: 2,548
- Number of major public sector collaboration projects: 89

SEAI Annual Report 2019

Includes three programmes:

- Energy Efficiency Programme
- Voids Programme (Energy Efficiency Works)
- Thermal Upgrade Programme, Limerick Regeneration

Please see note 1 for detailed information

Built Environment/Energy Efficiency

Note 1

Period of construction	Proportion of stock	Total annual savings for 3,763 units retrofitted in 2019	
		Primary energy use	
		(GWh/yr)	CO ₂ emissions (ktCO ₂ /yr)
1930-1971	48.40%	28.8	6.3
1972-1978	19.00%	10.9	2.4
1979-1982	8.90%	2.0	0.4
1983-1991	23.70%	2.5	0.50
TOTAL	100%	44.2	9.7

Calculations are based on a typical two-storey end-of-terrace house of 85.3m² floor area. Calculations are carried out in accordance with DEAP 4.2 methodology and software.

The average size of 85.3m² is based on SEAI BER database for end-of-terrace houses in the Midlands. The primary Energy use and CO₂ emission savings have been worked out per period of construction of social housings. The proportion of dwellings per period of construction is taken from Table 5.4 of the report "Jobs, Growth and Reduced Energy Costs: Green print for a national Energy Efficiency Retrofit Programme", published in 2009 by The Institute of International and European Affairs.

It is assumed that all dwellings had been previously upgraded with a gas boiler with an efficiency of 86% before undergoing the SHIP Phase 1 renovation. It is assumed that only dwellings built before 1991 were retrofitted. It is assumed that Phase 1 retrofit works are the upgrading ceiling insulation to 0.16 W/m².K and wall insulation to 0.35 W/m².K.

Voids Programme (Energy Efficiency Works) Impact Indicators	2019
Number of Voids programme homes with improved energy efficiency (see note for assumptions)	1,310
Primary energy savings (GWh)	4.87
CO ₂ emissions reduced (kt CO ₂)	0.971

Thermal Upgrade Programme - Limerick Regeneration	2019
Number of homes with improved energy efficiency (through thermal upgrades); Limerick regeneration	385
Annual primary energy savings (GWh)	Building Energy Ratings (BER) Unavailable
Annual CO ₂ emissions reduced (kt CO ₂)	

Clean Transportation

Environmental Objectives: Pollution Prevention and Control/Climate Change

Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator		
					Passenger Journeys (Million)	Additional km of cycling infrastructure completed/improved (Kilometres)	Take-up of Grant Schemes/Tax foregone (Number of vehicles)
Carbon reduction*	2019	3.7	3.7	100%	na	na	8,924
Low Emission Vehicle Incentivisation (Tax foregone)	2019	45.3	45.3	100%	na	na	24,122
Public service provision payments	2019	307.9	307.9	100%	294.6	na	na
Public and sustainable transport investment programme*	2019	472.4	472.4	100%	na	7	na
Greenways*	2019	9.8	9.8	100%	na	11	na

Total Allocated 2019 to Clean Transportation

839.2

Figures may not total due to rounding

*These figures do not include an additional €1.9m spent on carbon reduction, €2.5m spent on public and sustainable transport investment and €0.6m spent on Greenways in 2019; to which proceeds were allocated in the 2020 Allocation Report.



e Mitigation

Other impact indicators and additional information

Small Public Service Vehicle Grant Scheme

- Greenhouse gas emissions reductions (ktCO₂ e): 0.89
- Take-up of Grant Schemes - number of grants issued: 35

Electric Vehicle (EV) Toll Incentive

- Take-up of Grant Schemes - number of grants issued: 8,889 EVs registered for the Scheme (undertaking c. 522,220 transactions)
- Greenhouse gas emissions reductions for EV toll Incentive (ktCO₂ e) cannot be calculated as it is not possible to state that the scheme was the primary reason to switch to an EV; it is one of a broader suite of incentives which promote the transition to EVs

Cost of VRT for less environmentally harmful vehicles breakdown

- Total cost of relief battery electric vehicles (BEVs): €17.3 million
- Number of battery electric vehicles: 4,107
- Total cost of relief plug-in hybrid vehicles (PHEVs): €7.2 million
- Number of PHEVs: 3,750
- Total cost of electric hybrids: €20.8 million
- Number of electric hybrids: 16,265
- Total Tax Foregone: €45.3 million
- Total number of vehicles: 24,122

Spending Review 2019, Incentives for personal Electric Vehicle purchase

See Note 2 for breakdown information on Public service provision payments and Sustainable transport investment programme details

Bus & Rail Statistics for Ireland - State Funded Services

- No. of users: 1,196,428 (the figures presented are the total raw count from the counters on the 3 longest Greenways - Waterford, Old Rail Trail and Royal Canal Greenways).
- Additional greenway projects funded for feasibility/detailed design/environmental screening: 10km

Greenways Strategy

Clean Transportation

Note 2

Annual Public Service Provision Payment (PSPP) Passenger Journeys (Millions)	2019
PSPP Public Transport Passenger Numbers:	294.6
LUAS Passenger Numbers	48.3
Iarnród Éireann Passenger Numbers	50.1
Dublin Bus Passenger Numbers	138.3
Bus Éireann Passenger Numbers	39.9
Go ahead	13.9
Others services	4.1

Annual PSPP Fleet & Tram Numbers	2019
PSPP Bus Fleet numbers - Dublin Bus/Go Ahead	1125
PSPP Bus Fleet numbers - Bus Éireann	574
LUAS tram numbers	73

Additional Measures (Metres)	2019
Footpath	3,826
Shared Footpath/Cycle Track	1,283
Cycle Lane/Track	5,983
Bus Lane	275

Annual Operated Vehicle Kilometres* (Millions)	2019
LUAS	4.4
Iarnród Éireann	17.7
Dublin Bus	44.7
Bus Éireann	44.4

Annual Operated Vehicle Seat Kilometres** (Millions)	2019
LUAS	1,363.4
Iarnród Éireann	6,379.1
Dublin Bus	3,142.3
Bus Éireann	2,638.0

*Operated vehicle kilometres refers to the actual amount of vehicle kilometres that a bus or rail company has operated in a given period, as opposed to 'scheduled vehicle kilometres' which would indicate the number of vehicle kilometres that they intended to operate as per their cumulative timetables.

**Vehicle seat-kilometres is a unit of passenger transport capacity measuring the total number of seats available multiplied by the kilometres travelled."

Dublin Bus and Bus Éireann Emissions Metrics	2019
Passenger Journeys for Dublin Bus and Bus Éireann (millions)	178.2
CO ₂ e (tonnes) - Dublin Bus network buses	66,937
CO ₂ e (tonnes) - Bus Éireann network buses	49,147
CO ₂ e (tonnes) - Bus Éireann and Dublin Bus	116,084
CO ₂ e (grams) per passenger journey - Dublin Bus	484
CO ₂ e (grams) per passenger journey - Bus Éireann	1,232
CO ₂ e (grams) per passenger journey - Dublin Bus and Bus Éireann	651

Climate Change Adaptation

Environmental Objectives: Climate Change Adaptation

Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator	
					No. of Properties Protected on completion	Damages/Losses Avoided on completion (€ Million)
Flood Risk Management	2019	58.3	58.3	100%	6685	571

Total Allocated 2019 to Climate Change Adaptation	58.3
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Note 3

Project	Current Status	No of Properties Protected on Completion	Damage/Losses Avoided on Completion (€ Million)
Ashbourne	Under construction	49	3
Athlone FRS	Under construction	554	48
Bandon FRS	Under construction	392	33
Claregalway	Substantially completed	77	11
Clonakilty	Under construction	296	34
Douglas/Togher	Under construction	221	35
Dunkellin	Substantially completed	23	9
Ennis South	Under construction	126	5
Enniscorthy	At scheme development	326	52
Kings Island (Limerick)	At planning	473	37
River Dodder (Dublin)	Tidal phase completed and Fluvial phase under construction	1938*	70
River Lee (Cork city)	At scheme development	2100	185
Templemore FRS	Under construction	110	49
Total		6,685	571

* (includes 1,000 already protected by Tidal phase)



Other impact indicators and additional information

See Note 3

<https://www.floodinfo.ie/>

Project Link

na

[Athlone FRS](#)

[Bandon FRS](#)

[Claregalway](#)

[Clonakilty](#)

[Douglas/Togher](#)

[Dunkellin](#)

[Ennis South](#)

na

[Kings Island \(Limerick\)](#)

[River Dodder \(Dublin\)](#)

[River Lee \(Cork city\)](#)

[Templemore FRS](#)

Environmentally Sustainable Management of Living N

Environmental Objectives: Pollution Prevention and Control/Climate Change

Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator
					Afforestation/Land area conserved/restored (hectares)
Forestry and bioenergy*	2019	68.5	68.5	100%	3,550
Environmental Protection Agency	2019	38.8	38.8	100%	na
International Climate Change Commitments	2019	2.5	2.5	100%	na
Landfill remediation	2019	7.0	7.0	100%	na
Climate Initiatives - Technical Research And Modelling*	2019	0.0	0.0	100%	na
National heritage (NPWS)	2019	13.5	13.5	100%	na
Peatlands restoration and management	2019	4.0	4.0	100%	63

Total Allocated 2019 to Environmentally Sustainable Management of Living Natural Resources and Land	157.5
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Figures may not total due to rounding

* These figures do not include an additional €21.2m spent on Forestry and bioenergy and €2.1m spent on Climate Initiatives - Technical Research and Modelling in 2019; to which proceeds were allocated in the 2020 Allocation Report.

Natural Resources and Land Use

Mitigation/Natural Resource Conservation/Biodiversity

Sustainable Development Goals



Other impact indicators and additional information

- Hectares of Broadleaf: 893
- Hectares of Conifer: 2,657
- Number of landowners who planted: 499 (of which farmers: 206)

Annual Forestry Statistics

- Number of reports published: 38
- Number of environmental research reports published: 43
- Visits to Urban Waste Water Sites: 299
- Visits to drinking water sites: 62
- Visits to Industrial, waste, dumping at sea and volatile organic compounds (VOC) facilities: 1,486
- Environmental licences issued: 132 (permits, authorisations and licences)
- Radiation licences issued: 1,313
- Prosecutions heard: 12

EPA Annual Report and Accounts, 2019

- Number of reports published: 1

Ireland's Climate and Environmental Finance Report

- Number of landfill sites remediated: 1
- Number of Diesel laundering sites cleaned up: 53
- Number of Local Authorities in receipt of funding for landfill remediation: 19
- Number of Landfill Remediation projects being funded: 76
- Number of Local Authorities in receipt of funding for Diesel laundering clean-up: 2

EPA Code of Practice Environmental Risk Assessment for Unregulated Waste Disposal Sites

Key reports:

- National Air Pollution Control Plan 2019 (EnvEcon);
- Backbone—An Adaptable Energy Systems Modelling Framework, Helistö et al Energies 2019, 12(17), 3388; (UCD);
- The effects of an incremental increase in the Irish carbon tax towards 2030 (ESRI Working Paper No: 619 ESRI);
- The impacts of removing fossil fuel subsidies and increasing carbon tax in Ireland, ESRI Research Series No: 98 ESRI;
- Transitioning to a low-carbon Irish economy: An analysis of regional labour impacts, ESRI Research Series No: 100 ;
- Technical analysis (using PLEXOS) and presentation on the contribution of a proposed Shannon LNG Terminal to Ireland's future energy system and security(UCC);
- Recession or retrofit: An ex-post evaluation of Irish residential space heating trends (October 2019) (UCC);
- Improving energy savings from a residential retrofit policy – a new model to inform decisions (Nov 2019) (UCC)

- Number of species held by National Biodiversity Data Centre: 16,219
- Number of records held by National Biodiversity Data Centre: 4,294,599
- Number of Natura sites with Site Specific Conservation Objectives: 39
- Number of NPWS farm plan schemes: 41

National Biodiversity Action Plan

- Number of designated raised bogs where conservation/restoration measures have commenced : 1
- Number of annual payments made under the Cessation of Turf Cutting Compensation Scheme for designated raised bogs: 3,288

National Peat lands Strategy Progress Report

Renewable Energy

Environmental Objectives: Climate Change Mitigation

Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator	
					Number of companies (including public sector organisations) benefitting from SEAI Research & Innovation programmes as lead, partner or active collaborators	Number of SEAI Research & Innovation awards benefitting research institutions
Energy research programmes	2019	10.3	10.3	100%	36	46
Total Allocated 2019 to Renewable Energy			10.3			



Other impact indicators and additional Information

- The SEAI National Energy Research Development & Demonstration (RD&D) Funding Programme invests in innovative energy RD&D projects which contribute to Ireland's transition to a clean and secure energy future. The National Energy RD&D Programme is a key enabler of Ireland's medium to long term energy policy targets and Ireland's Climate Action Plan.

The percentage of funding ranges from 25-60% for projects which are classified as 'experimental development'; 50-80% for industrial research, and up to 100% for non-economic public good research performed mostly by non-commercial entities such as Universities or Research Institutions. Further details are available in SEAI's National Energy Research, Development & Demonstration Budget Policy,

<https://www.seai.ie/grants/research-funding/research-development-and-demonstration-fund/>

- Launch of the annual National Energy Research & Policy Conference series in November 2019, co-hosted by SEAI and DECC. The thematic focus for this Conference was the Transformation of Ireland's Electricity Sector. The event brought together leading experts from the key research, policy and industry organisations involved in leading the transformation of Ireland's electricity sector.

All projects funded by the National Energy RD&D Funding Programme are available to view on the SEAI's National Energy Research Database

Samples of completed projects 2019 awards:

- Financing Energy Efficiency in Ireland: Sustainability Works were awarded funding through the 2019 SEAI National Energy RD&D Funding Programme. This project involved an examination of research available on residential retrofit and energy efficiency finance, and resulted in the publication of a comprehensive report – 'Financing Energy Efficiency in Ireland: A Handbook on the Residential Sector'. This research provides key insights of relevance to both the financial sector and the wider retrofit delivery market.
<https://www.seai.ie/data-and-insights/seai-research/research-projects/details/financing-energy-efficiency-in-ireland:-a-handbook-on-the-residential-sector>
- OPFLOW – Options on a Pilot Project for Floating Offshore Wind: The OPFLOW project led by a research team through MaREI, at University College Cork, was among those to receive funding through the 2019 SEAI National Energy RD&D Funding Programme. This project involved an investigation of the potential for a pre-commercial pilot floating offshore wind project in Ireland.

<https://www.seai.ie/data-and-insights/seai-research/research-projects/details/opflow--options-on-a-pilot-project-for-floating-offshore-wind>

Sustainable Water and Wastewater Management

Environmental Objectives: Climate Change Adaptation/Biodiversity/Natural

Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator				
					Water savings (million litres of water per day)	New and upgraded water treatment plants	Length of water main laid - New and rehabilitated (Km total)	New and upgraded wastewater treatment plants	Length of sewer laid- New and rehabilitated (km total)
Rural Water Programme	2019	41.1	41.1	100%	na	na	na	na	na
Irish Water Capital Expenditure	2019	646.0	646.0	100%	160	4	393	10	69

Total Allocated 2019 to Sustainable Water and Wastewater Management	687.1
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Figures may not total due to rounding



Resource Conservation/Pollution Prevention and Control

Other impact indicators and additional information

- No. of Operational Supports to Private Group Water Schemes: 506
- No. of Operational Supports to Public Group Water Schemes: 171
- Total no. of Private Wells (new and upgraded): 2,072
- Total no. of Septic Tanks (upgraded): 160

Three-year investment programme for water services in rural areas

Water Quality

- Number of people removed from a boil water notice in place for longer than 30 days: 4,660
- Number of water supply schemes removed from the Environmental Protection Agency's Remedial Action List (RAL), which highlights the water supplies that pose a risk to customers: 26
- Implementation of the Irish Water *Lead in Drinking Water Mitigation Plan* (number of lead services replaced): 15,774

Wastewater Quality

- Reduction in number of untreated agglomerations with no treatment or preliminary treatment of raw sewage: 2
- Number of agglomerations removed from the EPA's Priority Areas for Wastewater Improvement List: 15

Conservation (Water savings million litres of water per day)

- Private side leakage savings (Ml/day): 15.8
- Public side leakage savings (Ml/day): 143.7

Future Proofing

- Overall compliance with UWWTD: 89%

Irish Water Annual Reports

Appendix 1

2019 Allocation Table*

Eligible Green Categories	Note	Project/ Programme/ Scheme	2019 Green Expenditure (€m)	2019 Allocation (A)	2018 Green Expenditure (Appropriation Accounts)	Adjustment to 2018 Allocation (B)	ISGB Proceeds Allocation (A+B)
Built Environment/Energy Efficiency Total			216.0	216.0	185.6	0.0	216.0
Built Environment/Energy Efficiency	1	Sustainable energy programmes	151.2	151.2	127.8	0.0	151.2
	2	SEAI admin and general expenses	17.4	17.4	11.0	0.0	17.4
	3	Estate regeneration – social housing improvements	47.5	47.5	46.8	0.0	47.5
Clean Transportation Total			839.1	839.1	736.0	-2.3	836.8
Clean Transportation	4	Carbon reduction	3.7	3.7	0.7	0.0	3.7
	5	Low Emission Vehicle Incentivisation (Tax foregone)	45.3	45.3	27.9	0.0	45.3
	6	Public service provision payments	307.9	307.9	295.6	-0.3	307.7
	7	Public and sustainable transport investment programme	472.4	472.4	408.6	-2.7	469.7
	8	Greenways	9.8	9.8	3.3	0.7	10.5
Climate Change Adaptation Total			58.3	58.3	64.6	0.0	58.3
Climate Change Adaptation	9	Flood Risk Management	58.3	58.3	64.6	0.0	58.3
Environmentally Sustainable Management of Living Natural Resources and Land Use Total			134.2	134.2	159.1	26.2	160.4
Environmentally Sustainable Management of Living Natural Resources and Land Use	10	Forestry and bioenergy	68.5	68.5	94.5	23.8	92.3
	11	Environmental Protection Agency	38.8	38.8	35.3	2.6	41.4
	12	International Climate Change Commitments	2.5	2.5	4.5	0.0	2.5
	13	Landfill remediation	7.0	7.0	10.3	0.0	7.0

*As noted in ISGB Allocation Report 2020 an additional €23.3 million was spent on eligible green projects in the appropriation accounts and was allocated in the 2020 report.

Eligible Green Categories	Note	Project/ Programme/ Scheme	2019 Green Expenditure (€m)	2019 Allocation (A)	2018 Green Expenditure (Appropriation Accounts)	Adjustment to 2018 Allocation (B)	ISGB Proceeds Allocation (A+B)
	n/a	Climate Initiatives - Technical Research And Modelling	0.0	0.0	0.0	-0.2	-0.2
	14	National heritage (NPWS)	13.5	13.5	14.0	0.0	13.5
	15	Peatlands restoration and management	4.0	4.0	0.6	0.0	4.0
Renewable Energy Total			10.3	10.3	8.4	0.0	10.3
Renewable Energy	16	Energy research programmes	10.3	10.3	8.4	0.0	10.3
Sustainable Water and Wastewater Management Total			687.1	687.1	539.1	0.0	687.1
	17	Rural Water Programme	41.1	41.1	39.1	0.0	41.1
Sustainable Water and Wastewater Management	18	Irish Water Capital Expenditure	646.0	646.0	500.0	0.0	646.0
Grand Total expenditure and allocations			1,945.1	1,945.1	1,692.9	23.9	1,969.0

Figures may not total due to rounding

Glossary

EPA	Environmental Protection Agency
FRS	Flood Relief Scheme
GWh	GigaWatt hours
GHG	Greenhouse Gas
ktCO₂e	Kilotonnes of carbon dioxide equivalent
KM	Kilometre
VOC	Volatile Organic Compounds
EV	Electric vehicle
BEV	Battery electric vehicle
PHEV	Plug-in hybrid electric vehicle
LEV	Low emission vehicle
na	Indicator is not applicable for Project/Programme/Scheme
NPWS	National Parks & Wildlife Service
SEAI	Sustainable Energy Authority of Ireland
UWWTD	Urban Waste Water Treatment Directive
VRT	Vehicle Registration Tax



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