



Irish Sovereign Green Bond

Eligible Green Projects
Impact Report



Rialtas na hÉireann
Government of Ireland

2017/2018

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Introduction and summary

This is the first annual impact report issued in accordance with the [Irish Sovereign Green Bonds \(“ISGB”\) Framework](#). It details the environmental impact measures connected with the first allocation report which covers the years 2017 and 2018.

Irish Sovereign Green Bonds (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 that generate a positive environmental benefit.

The first annual allocation report, for the year ended 2018, was published in June 2019. This outlined the funding amounts allocated to Eligible Green Projects (see Appendix 1). Overall, €1,949 million was allocated to Eligible Green Projects from the total proceeds of €2,983 million outstanding at end-2018. This left an unallocated amount of €1034.4 million at the start of 2019 for allocation thereafter. Subsequently, the syndicated tap in October 2019 brought the total available for allocation to €3,293 million .

In the 2018 Allocation Report examples of potential key environmental impact indicators were included across the six categories eligible for allocations:

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

These Impact Indicators can be linked back to the corresponding “Project/programme/scheme” in the 2017 and 2018 Allocation Table (see Appendix 1).

In relation to the 2017 and 2018 Allocation figures in the appendix all expenditure numbers can 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 for 2017 and 2018 in Appendix 1 are copied from the 2018 ISGB Allocation Report and are based on a provisional outturn provided by the Department of Public Expenditure and Reform in its databank in March 2019. The expenditure numbers were subject to finalization later in 2019 in the *2018 Appropriation Accounts*. Therefore some €23.9 million of additional expenditure in eligible green categories is carried into the allocations to 2019.

Acknowledgements

This Report was produced with the co-operation of Government departments and other State bodies¹ responsible for expenditure and subsidies which are allocated from the proceeds of ISGBs.

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, the Department of Public Expenditure and Reform, the Department of Communications, Climate Action and Environment and the Department of Finance.

The Working Group is grateful to the many colleagues who provided information and assistance especially with the difficult backdrop of the Covid-19 crisis in the run-up to production of this Report.

Those Government departments and State bodies are as follows:

- [Department of Finance](#)
- [Department of Public Expenditure and Reform](#)
- [Department of Housing, Planning and Local Government](#)
- [Department of Transport, Tourism and Sport](#)
- [Department of Culture, Heritage and the Gaeltacht](#)
- [Department of Agriculture, Food and the Marine](#)
- [Department of Communications, Climate Action and Environment](#)
- [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 2020 when this report was drafted.

Eligible Green Projects Impact Report Year End 2018

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.

Note that impact indicators for 2017 and 2018 represent those reported by government departments for the respective full year. i.e. they have not been pro-rated where the allocation was less than 100% as is the case for 2017. In each case the percentage allocation is shown within the tables.

² Harmonized Framework for Impact Reporting. The Green Bond Principles. ICMA. June 2019. <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2019/Handbook-Harmonized-Framework-for-Impact-Reporting-WEB-100619.pdf>

Built Environment/Energy Efficiency

Environmental Objectives: Climate Change Mitigation



Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator				Other impact indicators and additional Information
					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, SEAI admin and general expenses	2017	98.70	16.02	16%	414	103	21,915	22,822	<ul style="list-style-type: none">Residential and Commercial Building Energy Ratings published: 102,533 SEAI also manages EV grants including: the Electric Vehicle Grant Scheme and Vehicle Home Charger Grant Scheme <ul style="list-style-type: none">Number of Electric Vehicle Grants provided: 907Value of Electric Vehicle Grants provided: €4.26 million SEAI Annual Report 2017
	2018	138.80	138.80	100%	565	139	21,350	23,349	<ul style="list-style-type: none">Residential and Commercial Building Energy Ratings published: 98,113 SEAI also manages EV grants including: the Electric Vehicle Grant Scheme and Vehicle Home Charger Grant Scheme <ul style="list-style-type: none">Number of Electric Vehicle Grants provided: 1,999Value of Electric Vehicle Grants provided: €9.13 millionNumber of Electric Vehicle Home Charger Grants provided: 1,034. (The SEAI Electric Vehicle Home Charger Grant scheme was introduced in January 2018). SEAI Annual Report 2018 Energy in the Residential Sector
Estate regeneration – social housing improvements	2017	38.89	7.78	20%	65.12	14	7,011	na	<p>Includes three programmes:</p> <ul style="list-style-type: none">Energy Efficiency ProgrammeVoids Programme (Energy Efficiency Works)Thermal Upgrade Programme. Limerick Regeneration Please see table below for detailed information
	2018	46.80	46.80	100%	56.06	11.5	6,199	na	

Total Allocated 2017 and 2018 to Built Environment/Energy Efficiency	209.40
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*Figures may not total due to rounding

Energy Efficiency Programme (see note)

Period of construction	Proportion of stock	Total annual savings for 5,421 units retrofitted in 2017		Total annual savings for 4,453 units retrofitted in 2018	
		Primary energy use		Primary energy use	
		(GWh/yr)	CO ₂ emissions (ktCO ₂ /yr)	(GWh/yr)	CO ₂ emissions (ktCO ₂ /yr)
1930-1971	48.40%	41.5	9.1	34.1	7.5
1972-1978	19.00%	15.6	3.5	12.9	2.8
1979-1982	8.90%	2.9	0.6	2.4	0.5
1983-1991	23.70%	3.6	0.8	2.9	0.6
TOTAL	100%	63.7	14	52.3	11.5

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

The average size of 85.3 m² 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: Greenprint 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	2017	2018
Number of Voids programme homes with improved energy efficiency (see DHPLG note for assumptions)	2,897 (breakdown: 1405 in 2017 and 1492 in 2018)	
Primary energy savings in GWh	13.72	
CO ₂ emissions reduced	2.715 kt CO ₂	

Thermal Upgrade Programme - Limerick Regeneration	2017	2018
Number of homes with improved energy efficiency (through thermal upgrades); Limerick regeneration	185	254
Annual primary energy savings in GWh	1.42	3.76
Annual CO ₂ emissions reduced	0.314 kt CO ₂	0.829 kt CO ₂

Clean Transportation

Environmental Objectives: Pollution Prevention and Control/Climate Change Mitigation



Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator			Other impact indicators and additional Information
					Passenger Journeys (Million)	Additional km of cycling infrastructure completed/improved (Kilometres)	Take-up of Grant Schemes/Tax foregone (Number of vehicles)	
Carbon reduction	2017	0.00	0.00	0%	na	na	na	This programme began in 2018
	2018	0.70	0.70	100%	na	na	4,175	<p><i>Small Public Service Vehicle Grant Scheme</i></p> <ul style="list-style-type: none">Greenhouse gas emissions reductions (ktCO₂ e): 1.34Take-up of Grant Schemes - number of grants issued: 40 <p><i>Electric Vehicle (EV) Toll Incentive</i></p> <ul style="list-style-type: none">Take-up of Grant Schemes - number of grants issued: 4,135 EVs registered for the Scheme (undertaking c. 150,000 reduced toll trips)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 <p>Low-Emission Bus Trials Report</p>
Low Emission Vehicle Incentivisation (Tax foregone)	2017	15.60	3.12	20%	na	na	8,787	<p>Cost of VRT for less environmentally harmful vehicles breakdown</p> <ul style="list-style-type: none">Total cost of relief battery electric vehicles (BEVs): €5.3 millionNumber of vehicles battery electric vehicles: 1,106Total cost of relief plug-in hybrid vehicles (PHEVs): €1.3 millionNumber of vehicles PHEVs: 625Total cost of electric hybrids: €9 millionNumber of vehicles electric hybrids: 7,056Total Tax Foregone: €15.6 millionTotal number of vehicles: 8,787 <p>Spending Review 2019, Incentives for personal Electric Vehicle purchase</p>
	2018	27.90	27.90	100%	na	na	15,712	<p>Cost of VRT for less environmentally harmful vehicles breakdown</p> <ul style="list-style-type: none">Total cost of relief BEVs: €9.2 millionNumber of vehicles BEVs: 1,930Total cost of relief PHEVs: €3.8 millionNumber of vehicles PHEVs: 1,994Total cost of electric hybrids: €14.9 millionNumber of vehicles electric :hybrids: 11,788Total Tax Foregone: €27.9 millionTotal number of vehicles: 15,712 <p>Spending Review 2019, Incentives for personal Electric Vehicle purchase</p>
Public service provision payments	2017	278.65	55.73	20%	252.5	na	na	Breakdown information on Public service provision payments and Sustainable transport investment programme details Bus & Rail Statistics for Ireland - State Funded Services
	2018	295.57	295.57	100%	268.6	na	na	
Public and sustainable transport investment programme	2017	368.91	73.78	20%	na	8.3	na	
	2018	408.59	408.59	100%	na	6.3	na	
Greenways	2017	0.00	0.00	0%	na	46	na	<ul style="list-style-type: none">46 kilometres Waterford Greenway opened on March 2017No. of users: 248,000Additional greenway projects funded for feasibility/detailed design/environmental screening: 130km (The 130km Royal Canal Greenway is due to be opened officially in 2020)Shared footpath-cycle track completed/improved: 3km <p>Greenways Strategy</p>
	2018	3.26	3.26	100%	na	0	na	<ul style="list-style-type: none">No. of users: 283,500Additional greenway projects funded for feasibility/detailed design/environmental screening: 85km**Comprised of 53 km Suir Blueway (officially opened in 2019) and 32 km South Kerry Greenway section (Project in planning and design)Shared footpath-cycle track completed/improved: 2.3km <p>Greenways Strategy</p>

Total Allocated 2017 and 2018 to Clean Transportation	868.64
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*Figures may not total due to rounding

Public service provision payments and Sustainable transport investment programme details

Annual Public Service Provision Payment (PSPP) Passenger Journeys (Millions)	2017	2018
PSPP Public Transport Passenger Numbers:	252.5	268.66
LUAS Passenger Numbers	37.65	41.84
Iarnród Éireann Passenger Numbers	45.51	47.96
Dublin Bus Passenger Numbers	136.26	140.04
Bus Éireann Passenger Numbers	31.13	35.25
Others PSPP services	1.95	3.57

Annual PSPP Fleet & Tram Numbers	2017	2018
PSPP Bus Fleet numbers - Dublin Bus/Go Ahead	993	1127
PSPP Bus Fleet numbers - Bus Eireann	542	588
LUAS tram numbers	66	73

Additional Measures (Metres)	2017	2018
Footpath	11,284	13,096
Shared Footpath/Cycle Track	2,985	2,314
Cycle Lane/Track	5,330	3,949
Bus Lane	2,950	1,547

Annual Operated Vehicle Kilometres* (Millions)	2017	2018
LUAS	3.66	4.07
Iarnród Éireann	15.04	16.02
Dublin Bus	55.98	54.91
Bus Éireann	36.9	42.73

Annual Operated Vehicle Seat Kilometres** (Millions)	2017	2018
LUAS	1,134.9	1,260.3
Iarnród Éireann	5,961.4	5,986.6
Dublin Bus	3,536.5	3,345.5
Bus Éireann	2,453.6	2,841.2

*Operated vehicle kilometre refer 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.

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		Other impact indicators and additional Information
					No. of Properties Protected on completion	Damages/Losses Avoided on completion (€ Million)	
Flood Risk Management	2017	45.37	9.07	20%	7,403	658	See “Project Table for breakdown information” https://www.floodinfo.ie/
	2018	64.64	64.64	100%			

Total Allocated 2017 and 2018 to Climate Change Adaptation	73.72
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**Figures may not total due to rounding*

Almost 70% of the total capital expenditure of €110m on flood risk management in 2017 and 2018 related to expenditure on the flood relief projects listed in the table following. These projects were at different stages of implementation during 2017/2018 – either completed, at construction or at design development. As primary indicators of the positive environmental impacts of those projects and of the benefit of the projects to the communities affected, the table gives information on the numbers of properties to be protected and the losses and damages avoided on completion of the projects.

Project	Current Status	No of Properties Protected on Completion	Damage/Losses Avoided on Completion (€ Million)	Project Link
Athlone FRS	Under construction	554	48	Athlone FRS
Bandon FRS	Under construction	392	33	Bandon FRS
Bray	Completed	660	163	Bray
Claregalway	Substantially completed	77	11	Claregalway
River Dodder (Dublin)	Tidal phase completed and Fluvial phase under construction*	1,938	70	River Dodder (Dublin)
Dunkellin	Substantially completed	23	9	
Skibbereen FRS	Completed	312	35	
South Campshires (Dublin)	Substantially completed	737	15	
Templemore FRS	Under construction	110	49	Templemore FRS
River Lee (Cork city)	Design	2,100	185	River Lee (Cork city)
Northlands (Meath)	Completed	27	3	
Kings Island (Limerick)	Advance works	473	37	
Total		7,403	658	

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

Environmentally Sustainable Management of Living Natural Resources and Land Use

Environmental Objectives: Pollution Prevention and Control/Climate Change Mitigation/Natural Resource Conservation/Biodiversity



Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator	Other impact indicators and additional Information
					Afforestation/Land area conserved/restored (hectares)	
Forestry and bioenergy	2017	101.57	20.31	20%	5,536	<ul style="list-style-type: none">Hectares of Broadleaf: 1,161Hectares of Conifer: 4,375Number of landowners who planted: 889 (of which farmers: 536) Annual Forestry Statistics
	2018	94.51	94.51	100%	4,025	<ul style="list-style-type: none">Hectares of Broadleaf: 1,069Hectares of Conifer: 2,956Number of landowners who planted: 624 (of which farmers: 309) Annual Forestry Statistics
Environmental protection agency	2017	32.00	6.40	20%	na	<ul style="list-style-type: none">Number of reports published: 49Number of environmental research reports published: 38Visits to Urban Waste Water Sites: 320Visits to drinking water sites: 57Visits to Industrial, waste, dumping at sea and VOC facilities: 1,535Environmental licences issued: 108Radiation licences issued: 294Prosecutions heard: 29 EPA Year in Review 2017 EPA Annual Report and Accounts, 2017
	2018	35.30	35.30	100%	na	<ul style="list-style-type: none">Number of reports published: 36Number of environmental research reports published: 32Visits to Urban Waste Water Sites: 315Visits to drinking water sites: 61Visits to Industrial, waste, dumping at sea and VOC facilities: 1,534Environmental licences issued: 94Radiation licences issued: 104Prosecutions heard: 28 EPA Year in Review 2018 EPA Annual Report and Accounts, 2018
International Climate Change Commitments	2017	2.50	0.50	20%	na	<ul style="list-style-type: none">Number of reports published: 2
	2018	4.50	4.50	100%	na	<ul style="list-style-type: none">Number of reports published: 2 Ireland's Climate and Environmental Finance Report
Landfill remediation	2017	5.72	1.14	20%	na	<ul style="list-style-type: none">Number of landfill sites remediated: 2Number of Diesel laundering sites cleaned up: 46Number of Tyre impacted sites remediated: 64Number of Local Authorities in receipt of funding for landfill remediation: 12Number of Landfill Remediation projects being funded: 14Number of Local Authorities in receipt of funding for Diesel laundering clean-up: 2Number of Local Authorities in receipt of funding for Tyre impacted sites: 14 EPA Code of Practice Environmental Risk Assessment for Unregulated Waste Disposal Sites
	2018	10.25	10.25	100%	na	<ul style="list-style-type: none">Number of landfill sites remediated: 1Number of Diesel laundering sites cleaned up: 35Number of Tyre impacted sites remediated: 9Number of Local Authorities in receipt of funding for landfill remediation: 16Number of Landfill Remediation projects being funded: 35Number of Local Authorities in receipt of funding for Diesel laundering clean-up: 2Number of Local Authorities in receipt of funding for Tyre impacted sites: 4
Climate Initiatives - Technical Research And Modelling	2017	0.61	0.12	20%	na	<ul style="list-style-type: none">Number of reports published: 4 Key reports: Energy Modelling to Inform the National Mitigation Plan May 2017 (UCC & ESRI) 'Solar PV where the sun doesn't shine: Estimating the economic impacts of support schemes for residential PV with detailed net demand profiling' Sept 2017 (UCD) The Economic and Environmental Impacts of increasing the Irish Carbon Tax Oct 2018 (ESRI) The State of Play in Electric Vehicle Charging Services: Global Trends with Insight for Ireland Nov 2018 (UCD)
	2018	0.00	0.00	0%	na	

Environmentally Sustainable Management of Living Natural Resources and Land Use



Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator	Other impact indicators and additional Information
					Afforestation/Land area conserved/restored (hectares)	
National heritage (NPWS)	2017	17.10	3.42	20%	na	<ul style="list-style-type: none">Number of species and biological records held by the National Biodiversity Data CentreNumber of species: 15,835 ; Number of records: 4,098,014Number of Natura sites with Site Specific Conservation Objectives: 46Number of NPWS farm plan schemes: 45 Farm plans National Biodiversity Action Plan
	2018	13.96	13.96	100%	na	<ul style="list-style-type: none">Number of species and biological records held by the National Biodiversity Data CentreNumber of species 16,128; Number of records: 4,207,232Number of Natura sites with Site Specific Conservation Objectives: 44Number of NPWS farm plan schemes: 40 Farm Plans National Biodiversity Action Plan
Peatlands restoration and management	2017	0.11	0.02	20%	0	<ul style="list-style-type: none">Number of annual payments made under the Cessation of Turf Cutting Compensation Scheme for designated raised bogs: 2,626 National Peat lands Strategy Progress Report 2017
	2018	0.62	0.62	100%	203	<ul style="list-style-type: none">Number of designated raised bogs where conservation/restoration measures have commenced: 2Number of annual payments made under the Cessation of Turf Cutting Compensation Scheme for designated raised bogs: 2,736 National Peat lands Strategy Progress Report 2017

Total Allocated 2017 and 2018 to Environmentally Sustainable Management of Living Natural Resources and Land	191.06
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*Figures may not total due to rounding

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		Other impact indicators and additional Information
					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	2017	6.51	1.30	20%	36	11	<p>In 2017 and 2018, SEAI supported innovative energy-related research, development & demonstration (RD&D) projects via the SEAI National Energy RD&D Funding Programme and the Prototype Development Fund (PDF). Projects funded by these programmes aim to support Ireland's transition to a clean energy future by:</p> <ul style="list-style-type: none">(i) Accelerating the deployment of energy-related products, processes and systems in the Irish marketplace;(ii) Growing Ireland's national capacity to access, develop and apply international class energy RD&D; and(iii) Providing policy guidance and support through results, outcomes and learnings from supported projects. <p>Project work supported aims to underpin the delivery of key national energy policies e.g. National Energy & Climate Plan, Climate Action Plan, OREDP, National Energy Efficiency Action Plan and the National Renewable Energy Action Plan. Research supported by these programmes also helps to inform further development of SEAI energy efficiency and renewable energy programmes and policies and provides the evidence base necessary to inform energy policy development in DCCAE.</p> <p>All projects funded by the National Energy RD&D Funding Programme are available to view on the SEAI's National Energy Research Database</p>
	2018	8.43	8.43	100%	68	52	

Total Allocated 2017 and 2018 to Renewable Energy	9.73
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*Figures may not total due to rounding

Sustainable Water and Wastewater Management

Environmental Objectives: Climate Change Adaptation/Biodiversity/Natural Resource Conservation/Pollution Prevention and Control



Project/Programme/Scheme	Year	Green Expenditure (€ Million)	ISGB Proceeds Allocation (€ Million)	Allocation Percentage from ISGB Proceeds	Impact Indicator					Other impact indicators and additional Information
					Water savings (million litres of water per day)	New and upgraded water treatment plants	Length of water main laid (Km total)	New and upgraded wastewater treatment plants	Length of sewer laid (km total)	
Rural water programme	2017	15.4	3.1	20%	na	na	na	na	na	<ul style="list-style-type: none"> No. of Operational Supports to Private Group Water Schemes: 505 No. of Operational Supports to Public Group Water Schemes: 149 Total no. of Private Wells (new and upgraded): 1,567 Total no. of Septic Tanks (upgraded): 63
	2018	39.1	39.1	100%	na	na	na	na	na	<ul style="list-style-type: none"> No. of Operational Supports to Private Group Water Schemes: 563 No. of Operational Supports to Public Group Water Schemes: 195 Total no. of Private Wells (new and upgraded): 1,569 Total no. of Septic Tanks (upgraded): 83 <p>New three-year investment programme for water services in rural areas</p>
Irish Water Capital Expenditure	2017	391.2	78.2	20%	22.5	5	238	14	20	<p>Water Quality</p> <ul style="list-style-type: none"> Number of people removed from a boil water notice in place for longer than 30 days: 5,833 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: 33 Implementation of the Irish Water Lead in Drinking Water Mitigation Plan (number of lead services replaced): 1,307 <p>Wastewater Quality</p> <ul style="list-style-type: none"> Reduction in number of untreated agglomerations with no treatment or preliminary treatment of raw sewage: 1 Number of agglomerations removed from the EPA's Priority Areas for Wastewater Improvement List (wastewater as the sole significant pressure on water bodies): 43 <p>Conservation (Water savings million litres of water per day)</p> <ul style="list-style-type: none"> Private side leakage savings (ML/day): 20.5 Public side leakage savings (ML/day): 2 <p>Future Proofing</p> <ul style="list-style-type: none"> Overall compliance with UWWTD: 84% <p>Irish Water Annual Reports</p>
	2018	500.0	500.0	100%	79.1	10	416	11	74	<p>Water Quality</p> <ul style="list-style-type: none"> Number of people removed from a boil water notice in place for longer than 30 days: 15,026 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: 22 Implementation of the Irish Water Lead in Drinking Water Mitigation Plan (number of lead services replaced): 12,447 <p>Wastewater Quality</p> <ul style="list-style-type: none"> Reduction in number of untreated agglomerations with no treatment or preliminary treatment of raw sewage: 6 Number of agglomerations removed from the EPA's Priority Areas for Wastewater Improvement List (wastewater as the sole significant pressure on water bodies): 24 <p>Conservation (Water savings million litres of water per day)</p> <ul style="list-style-type: none"> Private side leakage savings (ML/day): 23.1 Public side leakage savings (ML/day): 56 <p>Future Proofing</p> <ul style="list-style-type: none"> Overall compliance with UWWTD: 88% <p>Irish Water Annual Reports</p>

Total Allocated 2017 and 2018 to Sustainable Water and Wastewater Management	620.43
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*Figures may not total due to rounding

Appendix 1 – 2017/2018 Allocation Table³

Eligible Green Categories	Project/ Programme/ Scheme	2017 Green Expenditure (€m)	2018 Green Expenditure (€m)	Total 2017 and 2018 Expenditure (€m)	ISGB Proceeds Allocation
Built Environment/Energy Efficiency Total		137.6	185.6	323.2	209.4
Built Environment/Energy Efficiency breakdown	Sustainable energy programmes	90.1	127.8	217.9	142.1
	Sustainable Energy Authority of Ireland admin and general expenses	8.6	11.0	19.6	12.7
	Estate regeneration – social housing improvements	38.9	46.8	85.7	54.6
Clean Transportation Total		663.2	738.3	1,401.4	870.9
Clean Transportation breakdown	Carbon reduction	0.0	0.7	0.7	0.7
	Low emission vehicle incentivisation (Tax foregone)	15.6	27.9	43.5	31.0
	Public service provision payments	278.6	295.8	574.5	351.6
	Public and sustainable transport investment programme	368.9	411.3	780.2	485.1
	Greenways	0.0	2.6	2.6	2.6
Climate Change Adaptation Total		45.4	64.6	110.0	73.7
Climate Change Adaptation breakdown	Flood risk management	45.4	64.6	110.0	73.7
Environmentally Sustainable Management of Living Natural Resources and Land Use Total		159.6	132.9	292.6	164.9
Environmentally Sustainable Management of Living Natural Resources and Land Use breakdown	Forestry and bioenergy	101.6	70.7	172.3	91.0
	Environmental Protection Agency (EPA)	32.0	32.7	64.7	39.1
	International climate change commitments	2.5	4.5	7.0	5.0
	Landfill remediation	5.7	10.3	16.0	11.4

Eligible Green Categories	Project/ Programme/ Scheme	2017 Green Expenditure (€m)	2018 Green Expenditure (€m)	Total 2017 and 2018 Expenditure (€m)	ISGB Proceeds Allocation
	Climate initiatives – Technical research and modelling	0.6	0.2	0.8	0.3
	National Parks and Wildlife Service (NPWS)	17.1	14.0	31.1	17.4
	Peatlands restoration and management	0.1	0.6	0.7	0.6
Renewable Energy Total		6.5	8.4	14.9	9.7
Renewable Energy breakdown	Energy research programmes	6.5	8.4	14.9	9.7
Sustainable Water and Wastewater Management Total		406.6	539.1	945.7	620.4
Sustainable Water and Wastewater Management breakdown	Rural water programme	15.4	39.1	54.5	42.2
	Irish Water capital expenditure	391.2	500.0	891.2	578.2
Grand Total expenditure and allocations		1,418.8	1,669.0	3,087.8	1,949.0
		ISGB Proceeds as at 31 December 2018			2,983.4
		Unallocated Proceeds 1 January 2019			1,034.4
		Allocations as a percentage			65.3%

Figures may not total due to rounding.

³ As noted in ISGB Allocation Report 2019 an additional €23.9 million was allocated to eligible green projects in the appropriation accounts.

Appendix 2 – Compliance Review by Sustainalytics

Government of Ireland

Type of Engagement: Annual Review
Date: June, 2020
Engagement Team:
Evan Bruner, evan.bruner@sustainalytics.com, (+31) 20 205 0027
Charles Cassaz, charles.cassaz@sustainalytics.com, (+31) 20 205 02 09

Introduction

In 2018, the Government of Ireland (Ireland) issued green bonds aimed at financing projects which promote Ireland's transition to a low carbon, climate-resilient and environmentally sustainable economy. In 2020, Ireland engaged Sustainalytics to review the projects funded through the issued green bonds and provide an assessment as to whether the projects met the Use of Proceeds criteria and the Reporting commitments outlined in the Irish Sovereign Green Bonds Framework.

Evaluation Criteria

Sustainalytics evaluated the projects and assets funded in 2018 and 2019 based on whether the projects and programmes:

1. Met the Use of Proceeds and Eligibility Criteria outlined in the Irish Sovereign Green Bonds Framework; and
2. Reported on at least one of the Key Performance Indicators (KPIs) for each Use of Proceeds criteria outlined in the Irish Sovereign Green Bonds Framework.

Table 1 lists the Use of Proceeds, Eligibility Criteria, and associated KPIs while Table 2 lists the Detailed Findings.

Table 1: Use of Proceeds, Eligibility Criteria, and associated KPIs

Use of Proceeds	Eligibility Criteria	Key Performance Indicators
Built Environment / Energy efficiency	Support schemes for residential energy efficiency programmes (including heating, retrofit, insulation).	Annual energy savings (GWh)
		Annual GHG emissions reduced/avoided in tonnes of CO ₂ equivalent (ktCO ₂ e)
	Support schemes for energy efficiency programmes for the commercial, public and industrial sector.	Number of homes renovated
		Number of people benefited from grants
Clean Transportation	Public transportation initiatives, low emission vehicles incentives and infrastructure, and alternative fuels.	Number of public transport passenger journeys
		Additional km of cycling infrastructure completed / improved (km)
	Public programmes incentivizing modal shift away from private car use.	Take-up of Grant Schemes/ Tax foregone provided (Number of vehicles)
Climate Change Adaptation	Flood relief and other risk mitigation programmes.	No. of Properties Protected on Completion
		Damages/Losses Avoided on completion (Million)

Environmentally Sustainable Management of Living Natural Resources and Land Use	Grants, subsidies, and support schemes designed to reduce agricultural environmental impacts.	Number of hectares of forest planted
	Afforestation, restoration and conservation programmes.	Number of peatland areas restored
Renewable Energy	Support schemes for renewable heat use and energy storage.	Number of companies (including public sector organisations) benefitting from SEAI Research & Innovation programmes as lead, partner or active collaborators
	Research and development for the commercialization of renewable energy technologies.	Number of SEAI Research & Innovation awards benefitting research institutions
Sustainable Water and Wastewater Management	Clean water and wastewater treatment projects.	Water savings (million litres of water per day)
		New and upgraded water treatment plants
		Length of water main laid (km total)
		New and upgraded wastewater treatment plants
		Length of sewer laid (km total)

Issuing Entity’s Responsibility

Ireland is responsible for providing accurate information and documentation relating to the details of the projects that have been funded, including description of projects, estimated and realized costs of projects, and project impact.

Independence and Quality Control

Sustainalytics, a leading provider of ESG and corporate governance research and ratings to investors, conducted the verification of Ireland’s Green Bond Use of Proceeds. The work undertaken as part of this engagement included collection of documentation from Ireland employees and review of documentation to confirm the conformance with the Irish Sovereign Green Bonds Framework.

Sustainalytics has relied on the information and the facts presented by Ireland with respect to the Nominated Projects. Sustainalytics is not responsible nor shall it be held liable if any of the opinions, findings, or conclusions it has set forth herein are not correct due to incorrect or incomplete data provided by Ireland.

Sustainalytics made all efforts to ensure the highest quality and rigor during its assessment process and enlisted its Sustainability Bonds Review Committee to provide oversight over the assessment of the review.

Conclusion

Based on the limited assurance procedures conducted,¹ nothing has come to Sustainalytics’ attention that causes us to believe that, in all material respects, the reviewed bond projects, funded through proceeds of Ireland’s Green Bonds, are not in conformance

¹ Sustainalytics limited assurance process includes reviewing the documentation relating to the details of the projects that have been funded, including description of projects, estimated and realized costs of projects, and project impact, which were provided by the Issuer. The Issuer is responsible for providing accurate information. Sustainalytics has not conducted on-site visits to projects.

with the Use of Proceeds and Reporting Criteria outlined in the Irish Sovereign Green Bonds Framework.

Detailed Findings

Table 2: Detailed Findings

Eligibility Criteria	Procedure Performed	Factual Findings	Error or Exceptions Identified
Use of Proceeds Criteria	Verification of the projects funded by the green bond in 2019 to determine if projects aligned with the Use of Proceeds Criteria outlined in the Irish Sovereign Green Bonds Framework and above in Table 1.	All projects reviewed complied with the Use of Proceeds criteria.	None
Reporting Criteria	Verification of the projects funded by the green bond in 2017 & 2018 to determine if impact of projects was reported in line with the KPIs outlined in the Irish Sovereign Green Bonds Framework and above in Table 1. For a list of KPIs reported please refer to Appendix 1.	All projects reviewed reported on at least one KPI per Use of Proceeds criteria.	None

Appendices

Appendix 1: Impact Reporting by Eligibility Criteria

Use of Proceeds Category	Environmental Impact Reported by Eligibility Criteria
Built Environment / Energy Efficiency	Annual energy savings (GWh) reported as 479.12 in 2017 and 621.06 in 2018
	Annual GHG emissions reduced/avoided in tonnes of CO ₂ equivalent (ktCO ₂ e) reported as 117 in 2017 and 150.5 in 2018
	Number of homes renovated reported as 56,475 (2017 and 2018)
	Number of people who benefited from grants reported as 46,171 (2017 and 2018)
Clean Transportation	Number of public transport passenger journeys (Million) reported as 252.5 in 2017 and 268.66 in 2018
	Additional km of cycling infrastructure completed / improved (km) from 2017-2018 reported as 60.6
	Take-up of Grant Schemes/ Tax foregone provided (Number of vehicles) from 2017-2018 reported as 28,674
Climate Change Adaptation	Number of Properties Protected on completion reported as 7,403 (2017 and 2018)
	Number of Damages/Losses Avoided on completion (Million) reported as € 658 (2017 and 2018)
Sustainable Agriculture and Sustainable Management of Living Natural Resources	Number of hectares of forests planted from 2017-2018 reported as 9,561
	Number of hectares of peatlands restored in 2018 reported as 203
Renewable Energy	Number of companies (including public sector organisations) benefitting from SEAI Research & Innovation programmes as lead, partner or active collaborators reported as 104 (2017 and 2018)
	Number of SEAI Research & Innovation awards benefitting research institutions reported as 63 (2017 & 2018)
Sustainable Water and Wastewater Management	Water savings (million litres of water per day) reported as 101.6 (2017 and 2018)
	New and upgraded water treatment plants reported as 15 (2017 and 2018)
	New and upgraded wastewater treatment plants reported as 25 (2017 and 2018)
	Length of water main laid (km total) reported as 654 (2017 and 2018)
	Length of sewer laid (km total) reported as 94 (2017 and 2018)

Appendix 2: Allocation reporting

This is the second annual allocation report issued in accordance with the Irish Sovereign Green Bonds ("ISGB") Framework .

EUR €1,96 million was allocated to eligible green projects from the proceeds on hand of EUR €3,29 million at the end of 2019. The remaining proceeds of EUR €1,32 million will be available for allocation in 2020. The table below sets out the timeline of the proceeds raised and allocated.

Table – Timeline of the ISGB proceeds raised and allocated

	EUR €
Total Proceeds from Irish Sovereign Green Bond inaugural syndicated sale October 2018	2,983,410,000
Amount available for allocation as at year end 2018	2,983,410,000
Allocated Proceeds 31st December 2018	-1,949,048,618
Unallocated Proceeds 1st January 2019	1,034,361,382
Total Proceeds from Irish Sovereign Green Bond syndicated tap sale October 2019	2,258,380,000
Amount available for allocation as at year end 2019	3,292,741,382
Allocated Proceeds 31st December 2019	-1,969,037,000
Unallocated Proceeds 1st January 2020	1,323,704,382

Some EUR €23.9 million of additional expenditure in eligible green categories highlighted in the 2018 Appropriation Accounts, is carried into the allocations to 2019. These adjustments, shown in the 2019 Allocation Table are a normal part of the government accounts process and are not considered to be significant by the ISGB Working Group.

The Impact Indicators for 2019 will be reported in 2021.

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Sustainalytics

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Glossary

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



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