

# Irish Sovereign Green Bond

## Allocation Report Year End 2018



**Rialtas na hÉireann**  
Government of Ireland





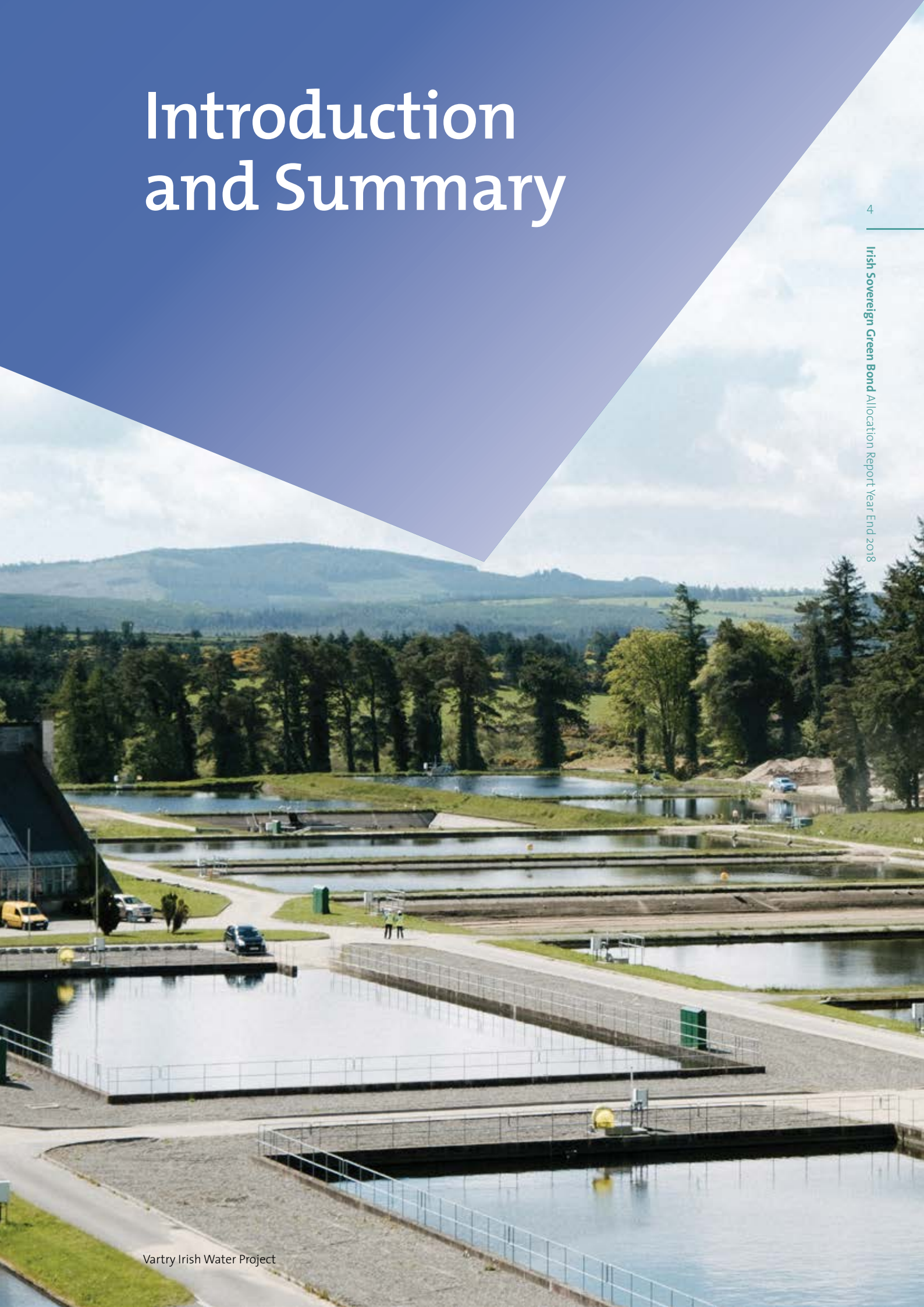


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# Introduction and Summary



# Introduction and Summary

The inaugural Irish Sovereign Green Bond ("ISGB") was issued in October 2018. This report is the first annual allocation report issued in accordance with the Irish Sovereign Green Bond Framework (the "Allocation Report").

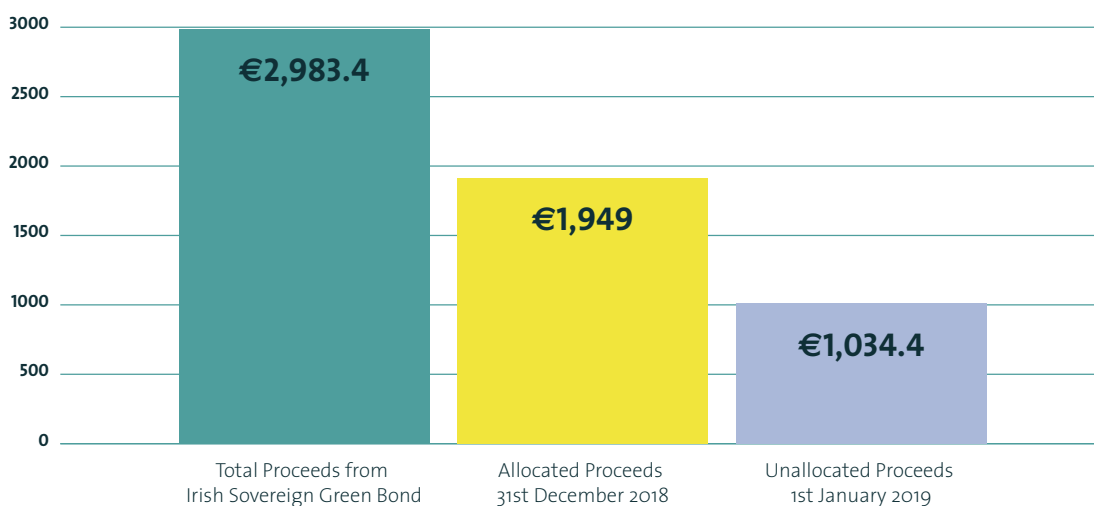
Ireland is committed to the transition to a low-carbon, climate-resilient and environmentally sustainable economy. Ireland believes green finance, including the issuance of ISGBs will contribute and play a key role in financing this transition.

[The ISGB Framework](#) was published in September 2018 along with a [second-party opinion from Sustainalytics](#). The ISGB Framework states that annual allocation reports will be publicly available to investors in ISGBs on the [National Treasury Management Agency's \(NTMA\)](#) website, until full allocation of an amount equal to the net proceeds of the relevant ISGB. The annual allocation report will outline the funding amounts allocated to Eligible Green Projects.

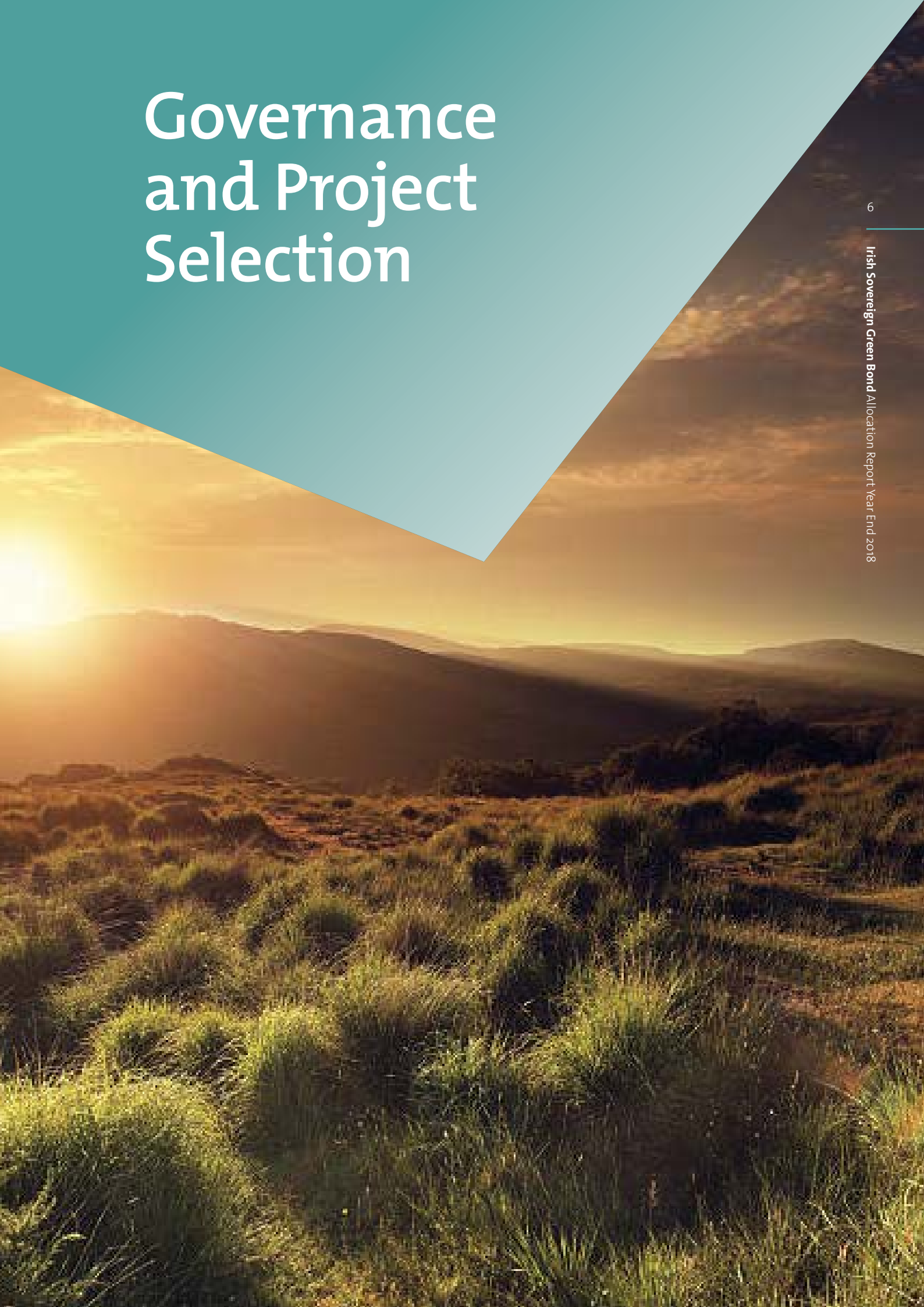
The ISGB Working Group has decided that, to maximise transparency and establish a sequence, this first Allocation Report should be delivered to investors some months in advance of the first anniversary of the issuance of the inaugural ISGB. It is intended that completed impact information will be combined in the next allocation report to be released in 2020.

**Overall, €1,949 million was allocated to Eligible Green Projects from the total proceeds of €2,983 million outstanding as at end-2018 (i.e. allocation of an amount equal to 65.3% of the inaugural ISGB proceeds).**

**Figure 1: ISGB proceeds and total allocation €million**



# Governance and Project Selection



# Governance and Project Selection

The ISGB Working Group oversees the implementation of the ISGB Framework, including reporting on the allocation to Eligible Green Projects of funding amounts equal to the funds raised by ISGBs. 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 ISGB Working Group consults with other Government departments and State Agencies in carrying out its remit which includes the identification of Eligible Green Bond Projects which will be evaluated and selected for allocation under the ISGB Framework based on the use of proceeds criteria.

Ireland's objective is to finance, or refinance, Eligible Green Projects as set out in the ISGB Framework. These are defined as those projects:

- which promote, in whole or in part and whether directly or indirectly, Ireland's transition to a low carbon, climate-resilient and environmentally sustainable economy;
- which are funded, in whole or in part and whether directly or indirectly, through Exchequer funded expenditures, subsidies or tax foregone (or a combination of all or some of the foregoing); and
- where the relevant Exchequer financial support has been provided within the 24 month period preceding the issue date of the relevant ISGB to refinance an existing project; and which otherwise qualify under the Framework.

The [National Development Plan 2018-2027](#) outlines an extensive set of Projects and Programmes which are Eligible Green Projects. These include the following national strategic outcomes:

- Sustainable mobility
- Transition to a low-carbon and climate-resilient society
- Sustainable management of water and other environmental resources.

In addition to the National Development Plan, the Government published a breakdown of key future investments and national plan commitments per strategic outcome in [“Investing in the transition to a Low-Carbon and Climate Resilient Society 2018 – 2027”](#).

The projects and programmes which deliver on the national strategic outcomes are broken down into expenditure by the Government in the [Revised Estimates Volume for Public Services](#) which is published close to the end of each year. The 2019 Revised Estimates Volume for Public Services contains a table in Appendix 11 which sets out what the Government considers to be climate-related expenditure.



# Allocation Table and Analysis

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Irish Sovereign Green Bond Allocation Report Year End 2018

Waterford Greenway

Photographer:  
John Foley, © Waterford City and County Council



# Allocation Table and Analysis

The following table of spending on Eligible Green Projects of this Allocation Report is assembled as follows:

- **Eligible Green Categories:** Projects/Programmes/Schemes are aligned with the six eligible green categories as set out in the ISGB Framework.
- **Notes:** Each Project/Programme/Scheme has an explanatory note which outlines its components and Potential Key Environmental Impact Indicators.
- **Project/Programme/Scheme:** These generally are as set out in the Department of Public Expenditure and Reform's Staff Paper ['An Introduction to the Implementation of Green Budgeting in Ireland'](#) and include subsidies and tax foregone. The Programmes and Schemes identified by the ISGB Working Group in this first allocation report are also aligned with the green budgeting process. Ireland signed up to the [OECD Paris Collaborative on Green Budgeting](#) during 2018.
- **2017 and 2018 Spending:** All expenditure numbers can generally be traced to the Department of Public Expenditure and Reform's [databank](#) on its website, on the table net expenditure analysis by Vote. The expenditure numbers for 2017 are based on the 2017 Appropriation Accounts (as audited by the Comptroller and Auditor General), showing the actual expenditure outturns for Government Departments. The expenditure numbers for 2018 used in this report are based on a provisional outturn provided by the Department of Public Expenditure and Reform in its databank in March 2019 and will be subject to finalisation later in 2019 in the 2018 Appropriation Accounts. Any adjustments will be reported in the second allocation report to be published in 2020. The tax incentives (Note 5) and subvention (Note 19-in relation to 2017), which are not included in the databank, have been verified by the relevant Government Departments.
- **Allocation from ISGB Proceeds:** The amount allocated to each project/programme/scheme is shown and is sub-totalled by Eligible Green Category. The total allocated amounts for 2017 and 2018 are net of Emissions Trading System (ETS) revenues. In 2017, sustainable energy Programmes (Note 1) and the Environmental Protection Agency (Note 11) had ETS revenues totalling €53.6 million allocated to them. In 2018, ETS revenues were allocated to Programmes and Schemes separate from those which received ISGB allocations.

The ISGB Working Group decided to allocate 100% to Eligible Green Projects for the year 2018 and close to 20% to Eligible Green Projects for the year 2017. Overall, €1,949 million or 65.3% was allocated to Eligible Green Projects from the total proceeds of €2,983.4 million outstanding at end-2018. This leaves an unallocated amount of €1,034.4 million at the start of 2019 which will be allocated to Eligible Green Projects hereafter.

**Figure 2: Percentage allocation per Eligible green category**

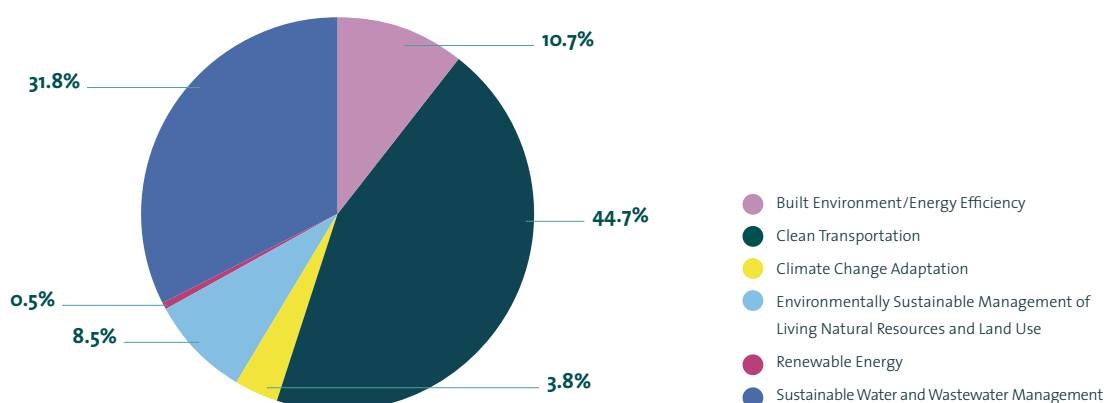


Table 1: Allocation Table

Eligible Green Categories	Note	Project/ Programme/ Scheme	2017 Green Expenditure (€m)	2018 Green Expenditure (€m)	Total 2017 and 2018 Expenditure (€m)	ISGB Proceeds Allocation
<b>Built Environment/Energy Efficiency Total</b>			<b>137.6</b>	<b>185.6</b>	<b>323.2</b>	<b>209.4</b>
Built Environment/Energy Efficiency breakdown	1	Sustainable energy programmes	90.1	127.8	217.9	<b>142.1</b>
	2	Sustainable Energy Authority of Ireland admin and general expenses	8.6	11.0	19.6	<b>12.7</b>
	3	Estate regeneration – social housing improvements	38.9	46.8	85.7	<b>54.6</b>
<b>Clean Transportation Total</b>			<b>663.2</b>	<b>738.3</b>	<b>1,401.4</b>	<b>870.9</b>
Clean Transportation breakdown	4	Carbon reduction	0.0	0.7	0.7	<b>0.7</b>
	5	Low emission vehicle incentivisation (Tax foregone)	15.6	27.9	43.5	<b>31.0</b>
	6	Public service provision payments	278.6	295.8	574.5	<b>351.6</b>
	7	Public and sustainable transport investment programme	368.9	411.3	780.2	<b>485.1</b>
	8	Greenways	0.0	2.6	2.6	<b>2.6</b>
<b>Climate Change Adaptation Total</b>			<b>45.4</b>	<b>64.6</b>	<b>110.0</b>	<b>73.7</b>
Climate Change Adaptation breakdown	9	Flood risk management	45.4	64.6	110.0	<b>73.7</b>
<b>Environmentally Sustainable Management of Living Natural Resources and Land Use Total</b>			<b>159.6</b>	<b>132.9</b>	<b>292.6</b>	<b>164.9</b>
Environmentally Sustainable Management of Living Natural Resources and Land Use breakdown	10	Forestry and bioenergy	101.6	70.7	172.3	<b>91.0</b>
	11	Environmental Protection Agency (EPA)	32.0	32.7	64.7	<b>39.1</b>
	12	International climate change commitments	2.5	4.5	7.0	<b>5.0</b>
	13	Landfill remediation	5.7	10.3	16.0	<b>11.4</b>



Eligible Green Categories	Note	Project/ Programme/ Scheme	2017 Green Expenditure (€m)	2018 Green Expenditure (€m)	Total 2017 and 2018 Expenditure (€m)	ISGB Proceeds Allocation
	14	Climate initiatives – Technical research and modelling	0.6	0.2	0.8	<b>0.3</b>
	15	National Parks and Wildlife Service (NPWS)	17.1	14.0	31.1	<b>17.4</b>
	16	Peatlands restoration and management	0.1	0.6	0.7	<b>0.6</b>
<b>Renewable Energy Total</b>			<b>6.5</b>	<b>8.4</b>	<b>14.9</b>	<b>9.7</b>
Renewable Energy breakdown	17	Energy research programmes	6.5	8.4	14.9	<b>9.7</b>
<b>Sustainable Water and Wastewater Management Total</b>			<b>406.6</b>	<b>539.1</b>	<b>945.7</b>	<b>620.4</b>
Sustainable Water and Wastewater Management breakdown	18	Rural water programme	15.4	39.1	54.5	<b>42.2</b>
	19	Irish Water capital expenditure	391.2	500.0	891.2	<b>578.2</b>
<b>Grand Total expenditure and allocations</b>			<b>1,418.8</b>	<b>1,669.0</b>	<b>3,087.8</b>	<b>1,949.0</b>
<b>ISGB Proceeds as at 31 December 2018</b>						<b>2,983.4</b>
<b>Unallocated Proceeds 1 January 2019</b>						<b>1,034.4</b>
<b>Allocations as a percentage</b>						<b>65.3%</b>

Figures may not total due to rounding.

# Notes to the Allocation Table

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# Notes to the Allocation Table

The Notes in the following section explain Projects/Programmes/Schemes that Ireland has generally identified in the [Green Budgeting](#) paper published in December 2018 by the Department of Public Expenditure and Reform.

In addition, some elements of the notes are based on the 2018 Annual Transition Statement (ATS) which [includes an overview of climate change mitigation and adaptation policy measures adopted to reduce emissions of greenhouse gases and to adapt to the effects of climate change in order to enable the achievement of the national transition objective](#). The ATS must be presented annually to both [Houses of the Oireachtas](#) (Ireland's parliament) by the Minister for Communications, Climate Action and Environment. The 2018 ATS is accompanied by [three additional publications](#):

- Update report on Sectoral Adaptation Plans;
- Update report on National Mitigation Plan Measures; and
- Update report on National Mitigation Plan Actions.

## Explanation and Potential Key Environmental Impact Indicators

### Built Environment/Energy Efficiency

#### **Note 1: Sustainable energy programmes**

These support a number of energy efficiency grant programmes to assist homes, farms, businesses and communities to reduce their energy usage and emissions.

Please note that in 2017 sustainable energy programmes had ETS revenues totalling €52.3 million allocated to them which can be seen at the end of Table 2.

These programmes include the following:

- **[Better Energy Homes](#):** This offers a range of energy efficiency grants to homeowners to reduce energy consumption, costs and emissions. Grants are provided to homeowners for insulation, high efficiency boiler upgrades, and solar energy installation. A typical grant is 30% of the investment undertaken. The objective is to renovate an increased quantum of homes by end 2020 to deliver cumulative projected savings of 1,900 gigawatt hours.
- **[Better Energy Warmer Homes](#):** This offers free energy efficiency upgrades to households in energy poverty to help reduce their energy consumption, costs and emissions. The objective is to renovate an increased quantum of homes by end 2020 to deliver cumulative projected savings of 590 gigawatt hours.
- **[Better Energy Communities](#):** This encourages community-based partnerships to improve the thermal and electrical efficiency of the building stock and energy-poor homes and facilities. The objective is to improve the energy efficiency of clusters of buildings in community-based settings to reduce energy consumption, costs and emissions. The objective, assuming the current level of uptake is maintained, is cumulative projected savings of 2,280 gigawatt hours.
- **[Warmth and Wellbeing Pilot Scheme](#):** This provides extensive energy efficiency upgrades to those in energy poverty who are living with chronic respiratory conditions.

- **Public Sector Energy Programme:** This offers comprehensive support and engagement to guide public bodies in reaching their energy saving targets. The Public Sector Energy Programme is an essential pillar in the [National Energy Efficiency Action Plan](#) and the Government's [Public Sector Energy Efficiency Strategy](#). The Sustainable Energy Authority Ireland (SEAI) provides the tools, training, and advice to integrate energy management into the general management of public sector organisations.
- **Deep Retrofit Pilot:** This programme carries out a number of new approaches for deep retrofit as part of a pilot programme. The initial focus will be on the residential sector. Deep retrofit is the significant upgrade of a building towards near zero energy requirements where it is practically feasible. The aim of the three year pilot is to fund fuel switching to low carbon heating technologies to demonstrate the multiple benefits of energy efficiency and investigate how best to support consumer decision making and investment in deep retrofit.
- **Exemplar Projects Technical Assistance:** This Scheme offers a range of technical supports to businesses/public sector bodies about how to improve/reduce their energy usage.
- **Support Scheme for Renewable Heat:** This Scheme has been designed to replace fossil fuel heating systems with renewable energy technologies. It will focus on heat users in the Non Emissions Trading (non-ETS) sector. This includes commercial, industrial, agricultural, district heating, public sector and other non-domestic heat users. The scheme is made up of two support mechanisms – an on-going operational support for biomass boiler and anaerobic digestion heating systems and an installation grant for electric heat pumps.
- **SEAI Vehicle Grant Scheme:** The Electric Vehicle Grant Scheme was introduced in April 2011 to incentivise and support the early deployment of EVs in Ireland. Grants of up to €5,000 are available. These grants are in addition to the Vehicle Registration Tax reliefs of up to €5,000 which apply to EVs (Electric vehicles tax incentives are described in Note 5).
- **SEAI Vehicle Home Charger Grant Scheme:** This support Scheme has been introduced to assist homeowners install an electric vehicle charge point on their property. The existing free home charger Scheme operated by ESB Ecars ended in 2017. This new Scheme commenced in 2018 and will provide a grant up to the value of €600 towards the purchase and installation of a home charger unit. The applicant must be the owner of an eligible new or second hand electric vehicle (EV).
- **Electric Vehicles – Public Engagement Programme:** The SEAI launched an awareness campaign as part of its electric vehicle public engagement programme in April 2018 and a dedicated website – [www.DrivingElectric.ie](http://www.DrivingElectric.ie) – provides answers to the questions drivers have about electric vehicles.



**Table 2: Sustainable Energy Programmes Expenditure and Allocation**

Main Programmes/Schemes	2017 & 2018 Expenditure (€m)	2017 & 2018 Allocated Amount (€m)
Better Energy Homes, Better Energy Warmer Homes & Warmth and Wellbeing Pilot Scheme	117.8	78.2
Better Energy Communities Programme	43.2	24.8
Deep Retrofit Pilot	5.9	5.2
Exemplar Projects Technical Assistance	18.4	13.8
Electric Vehicles Programmes: SEAI Electric Vehicle Scheme Home Charger Grant Scheme and Public Engagement Programme	14.9	11.4
Other Programmes	17.7	8.7
<b>Subtotal Programmes</b>	<b>217.9</b>	
2017 ETS Revenues	-52.3	
<b>Total</b>	<b>165.6</b>	<b>142.1</b>

**Potential Key Environmental Impact Indicators**

- (i) Number of homes renovated
- (ii) Greenhouse gas emissions reductions (ktCO<sub>2</sub> e)
- (iii) Number and value of Electric Vehicle Grants provided
- (iv) Number and value of Electric Vehicle Home Charger Grants provided

**Note 2: SEAI admin and general expenses**

This funding is provided to support the operation of the [Sustainable Energy Authority of Ireland \(SEAI\)](#). It undertakes a wide variety of tasks including administering and operating energy efficiency grant schemes, public education programmes on sustainability and climate change and providing policy advisory and technical support roles for energy policy development and delivery.

[The SEAI is the official source of energy data for Ireland.](#) It develops and maintains comprehensive national and sectoral statistics for energy production, transformation and end-use. This data is a vital input in meeting international reporting obligations, for advising policymakers and informing investment decisions. It also publishes extensive reports on energy production and consumption in Ireland, renewable energy and energy use in the residential sector.

**Note 3: Estate regeneration – social housing improvement**

The Social Housing Capital Investment Programme spans a range of Exchequer and local authority funded Programmes and initiatives designed to maintain and improve the local authority housing stock of approx. 130,000 units. A portion of the funds allocated to these schemes is dedicated to an ambitious estate regeneration programme which provides energy efficiency works to housing stock in need of remedial works. Through upgrading the energy efficiency of the social housing stock, this programme helps to reduce Ireland's national emissions, lowers energy bills and allows families in social housing to live in warmer, more comfortable homes.

**Potential Key Environmental Impact Indicators**

- (i) Number of housing units with improved energy efficiency
- (ii) Greenhouse gas emissions reductions (ktCO<sub>2</sub> e)

## Clean Transportation

### Note 4: Carbon reduction

This includes expenditure on Department of Transport, Tourism and Sport Schemes. Firstly, the [Electric Vehicle Small Public Service Vehicles Grant Scheme](#) (i.e. taxi/hackney/limousine) which provides grants of €7,000 for the purchase of battery electric vehicle (BEVs), and up to €3,500 for plug in hybrid vehicles (PHEVs). Secondly, the [Reduced Toll Fares for Electric Vehicles Scheme](#) which offers discounts of up to 50% off toll rates for BEVs and a 25% toll discount for PHEVs.

In addition, the Carbon Reduction Programme provides funding towards the cost differential for pilots and trials of low emission technology in the Public Service Obligation sector (such as the [Low Emission Bus Trial](#)) as well as supporting research into additional carbon reduction transport measures.

This programme began in 2018.

#### Potential Key Environmental Impact Indicators

- (i) *Take-up of grant Schemes*
- (ii) *Greenhouse gas emissions reductions (ktCO<sub>2</sub> e)*

### Note 5: Low emission vehicle (LEV) incentivisation

There are a number of elements to the incentivisation of LEV adoption. As there is considerable detail behind each element they are summarised below along with links to the relevant sources.

<a href="#">Vehicle Registration Tax Relief</a>	Vehicle Registration Tax Relief, which includes: - Up to €5,000 for new BEV until end 2021; - Up to €2,500 for new PHEV until end 2018.
<a href="#">Accelerated Capital Allowance (ACA)</a>	EVs and charging infrastructure qualify under the ACA Scheme.
<a href="#">0% Benefit-in-Kind (BIK)</a>	A 0% BIK rate (up to €50,000) is available to incentivise EVs without mileage conditions for at least three years.
<a href="#">Low Motor Tax</a>	Electric vehicles qualify for the lowest motor tax band available.

**Table 3: Low Emission Vehicle (LEV) Incentivisation Tax Foregone and Allocation**

Year	Hybrids €m	Plug in Electric €m	Battery Electric €m	Total Tax Foregone	2017 & 2018 Allocated Amount €m
2017	9.0	1.3	5.3	15.6	3.1
2018	14.9	3.8	9.2	27.9	27.9
			<b>Total</b>	<b>43.5</b>	<b>31.0</b>



#### Potential Key Environmental Impact Indicators

- (i) *Take-up of grant schemes by BEV and PHEV*
- (ii) *Take-up of VRT relief schemes by BEV and PHEV*
- (iii) *Greenhouse gas emissions reductions (ktCO<sub>2</sub> e)*
- (iv) *Number of BEVs and PHEVs*

#### **Note 6: Public service provision payments**

This is the funding that the Exchequer provides to support the continued operation of public transport services provided by public transport operators for the provision of socially necessary but financially non-viable, transport services. It also includes funding for local link services under the Rural Transport Programme which is managed by the National Transport Authority.

*To note:* This does not include payments to support the Essential Air Services Programme (i.e. the Public Service Obligation for air routes).

**Table 4: Public service provision payments by operator**

Public service provision payments by operator	2017 & 2018 Expenditure €m	2017 & 2018 Allocated Amount €m
Bus Éireann	107.2	65.5
Dublin Bus	105.5	62.3
Iarnród Éireann (Irish Rail)	288.2	170.6
Other PSO Operators	73.5	53.1
<b>Total</b>	<b>574.5</b>	<b>351.6</b>

Figures may not total due to rounding.

#### Potential Key Environmental Impact Indicators

- (i) *Passenger journeys*
- (ii) *Greenhouse gas emissions reductions (ktCO<sub>2</sub> e)*

#### **Note 7: Public and sustainable transport investment Programme**

This represents the State investment in public transport initiatives. The figure presented is split between investment in [Dublin Bus](#), [Bus Éireann](#), [Iarnród Éireann \(Irish Rail\)](#) and the [LUAS tram service](#). It also funds cycling and walking initiatives and sustainable urban transport measures in cities.

*To note:* For 2018 there is an additional supplementary estimate of €5.2 million for public transport capital investment relative to the figure reported on the databank at the date of this report.

The European Investment Bank has provided a loan to part-fund the expansion of the LUAS tram system in Dublin. EU Connecting Europe Facility supports Heavy Rail Capital Investment and INTERREG funding has been provided for the Derry Multimodal Hub and cross border Greenways. For the avoidance of doubt, the allocations in this report represent Exchequer expenditure and do not include borrowing from the EIB or EU funding.

**Table 5: Main Programmes and Schemes**

Main Programmes/Projects	2017 & 2018 Expenditure €m	2017 & 2018 Allocated Amount €m
Heavy rail safety and development	341.7	206.8
LUAS Cross City	105.7	48.9
LUAS Green Line capacity enhancement	30.6	30.6
Other light rail expenditure	32.7	20.5
Bus fleet & Bus Connects	158.4	109.9
Sustainable Urban Transport (traffic management and related projects) & Cycling/Walking	58.7	39.5
Accessibility	8.2	5.5
Ticketing and technology	28.4	15.8
Smarter Travel & Others	15.7	7.6
<b>Total</b>	<b>780.2</b>	<b>485.1</b>

Figures may not total due to rounding.

- *Heavy rail safety and development:* In accordance with the requirements of EU law, the Department of Transport, Tourism and Sport (DTTAS) provides capital funding to Irish Rail under the Infrastructure Manager Multi-Annual Contract (IMMAC). This multi-annual investment programme protects investment already made in the national railway system by funding maintenance and safety projects needed to maintain safety and services levels in railway operations.
- *LUAS Cross City:* LUAS is a tram/light electric rail system in Dublin. The project extended the existing LUAS Green Line from St. Stephen's Green West to the Irish Rail Broombridge Station in Cabra, linking the Red and Green LUAS lines in the City Centre. The project included the purchase of 7 additional new 55 meter trams.
- *LUAS Green Line Capacity Enhancement:* This will increase the capacity of the LUAS Green Line to cater for future demand. The project consists of:
  - The lengthening of the 26 existing Green line trams from 43 metres to 55 metres.
  - The procurement of eight new 55 meter trams (in addition to the seven purchased as part of the LUAS Cross City project).
  - The extension of the Sandyford Depot to accommodate the maintenance of the longer trams.
- *Bus fleet/Bus Connects:* the [National Development Plan 2018-2027](#) identifies the delivery of the full [BusConnects](#) programme for Ireland's cities (inclusive of ticketing systems, bus corridors, additional capacity, new bus stops and bus shelters, transition of fleet to low emissions vehicles) as a key investment priority over the period of the plan. As part of the four year capital envelope, the Government has committed over €770 million exchequer funding to this Programme to 2021. Public consultations are ongoing on this project.

As set out in the National Development Plan, Ireland will no longer purchase diesel-only buses for the urban public service obligation fleets after July 2019.



- *Sustainable Urban Transport (traffic management and related projects) & Cycling/Walking*: These are on-going investment Programmes in the Greater Dublin Area and regional cities (Cork, Galway, Limerick and Waterford) and involve:
  - traffic management, bus priority and other smarter travel projects to allow transport infrastructure to function more effectively and help relieve traffic congestion.
  - a cycling and walking infrastructure package to enhance the network of urban walking and cycling routes that facilitates these networks as viable alternatives and providing connectivity with existing public transport infrastructure.
- *Accessibility Programme*: Accessibility features, such as wheelchair access and audio/visual aids, are built into all new public transport infrastructure projects and vehicles from the design stage. This funds programmes to install accessible bus stops, upgrade older train stations to make them wheelchair accessible, and to provide grant support for the introduction of more wheelchair accessible vehicles (WAVs) into the taxi fleet.
- *Ticketing/technology programme*: Funding is allocated to the National Transport Authority (NTA) on an annual basis to promote public transport use and improve customer experiences through the use of responsive and passenger-friendly smarter technologies such as the Real Time Passenger Information (RTPI) programme. Other initiatives that have been introduced to promote and integrate public transport provision include the Leap Card (a card that integrates payment for public transport services in Ireland's main cities) and journey planning apps. The NTA has launched a major project called "Next Generation Ticketing" which will provide new equipment to support the use of other means of payments in addition to Leap Cards, free travel passes and cash. They would include contactless bank cards and mobile phones.
- *Smart Travel Initiative*: The DTTAS is focused on the promotion of sustainable means of transport – walking, cycling and public transport – through the provision of funding for infrastructure as well as funding for behavioural change programmes, including in our schools, to encourage the use of more sustainable transport modes. Encouraging public transport use and modal shift is central to our national efforts to combat climate change and improve air quality. Ireland is highly dependent on the private car, accounting for 74% of all journeys taken. Promotion and supply of realistic and sustainable alternatives to reduce this dominance are underway.

#### Potential Key Environmental Impact Indicators

- (i) *Passenger journeys*
- (ii) *Length of rail construction*
- (iii) *Greenhouse gas emissions reductions (ktCO<sub>2</sub> e)*

#### **Note 8: Greenways**

This programme provides support for the development of mixed-use trails for walkers, cyclists and other non-motorised transport in Ireland. A [national strategy for greenways was published in July 2018](#) and provides further detail on planned development of this programme.

#### Potential Key Environmental Impact Indicators

- (i) *Kilometers of greenways added*
- (ii) *Estimate of usage*

## Climate Change Adaptation

### **Note 9: Flood risk management**

This expenditure supports investment in major flood works. These funds will provide for the ongoing development of structural and non-structural measures to mitigate the impact of flooding on society, households and businesses.

The Office of Public Works (OPW) is the lead State body for the coordination and implementation of Government policy on the management of flood risk in Ireland. The OPW is also the national authority for the implementation of the EU Directive on the Assessment and Management of Flood Risks [2007/60/EC].

A current list of the projects supported through these funds is available at the [OPW website](#).

The Government has committed almost €1 billion to flood relief measures as part of the National Development Plan 2018-2027. More information can be found at <http://www.floodinfo.ie/>.

Potential Key Environmental Impact Indicators:

- (i) *Population or enterprises (companies or farms) benefiting from measures to mitigate the consequences of floods*
- (ii) *Households protected*
- (iii) *Land area protected*

## Environmentally Sustainable Management of Living Natural Resources and Land Use

### **Note 10: Forestry and bioenergy**

This provides grants and annual premia payments to farmers (for 15 years) in exchange for planting trees. Following the mid-term review of the Forestry Programme, the Government approved significant improvements in grant and premium rates for planting forests. Details on the Scheme and the grant rates available can be found at the [Agriculture and Food Development Authority website](#).

Based on the accounting rules of the Land use, land-use change, and forestry (LULUCF) Regulation agreed in 2018, approximately 2.2 Mt of CO<sub>2</sub> per annum is forecast to be accountable against Ireland's Effort Sharing Regulation targets from afforested land.

In 2017, 5,536 hectares of new forests were planted in Ireland by private landowners under the afforestation Scheme. In addition, over 90km of forest roads were grant aided through the forest road Scheme. Based on the 2018 National Inventory Report to the UNFCCC, forests in Ireland sequestered over 3.6 Mt of CO<sub>2</sub> in 2016 with a further 0.8 Mt of CO<sub>2</sub> being added to the carbon pool of harvested wood products.

As part of the Forestry Programme 2014-2020, €71 million was spent on forestry measures in 2018. This has supported the establishment of 4,025 hectares of new forests and the construction of 74 km of forest roads, which will help to produce sustainable wood products and renewable fuels.

Potential Key Environmental Impact Indicators

- (i) *Land area afforested*
- (ii) *Greenhouse gas emissions reductions (ktCO<sub>2</sub> e)*



### **Note 11: Environmental Protection Agency**

Funding is provided to support the operation of the [Environmental Protection Agency \(EPA\)](#). The EPA is an independent public body established under the Environmental Protection Agency Act, 1992. It has a wide variety of functions relating to the protection of Ireland's environment, ranging from the enforcement of environmental law, monitoring, analysing and reporting on the environment, waste management and radiological protection. The EPA funds environmental research to identify pressures, inform policy and provide solutions in the areas of climate; water and sustainability; and new research projects into water, climate & air and environmental sustainability.

In 2017, the Environmental Protection Agency (Note 11) had ETS revenues totalling €1.3 million allocated for administration and expenses of the management of the ETS Scheme.

**Table 6: Environmental Protection Agency**

Main Programme	2017 & 2018 Expenditure €m	2017 & 2018 Allocated Amount €m
Environmental Protection Agency	64.7	39.1
2017 ETS Revenues	-1.3	
<b>Total</b>	<b>63.4</b>	<b>39.1</b>

#### Potential Key Environmental Impact Indicators

- (i) *Number of research publications*

### **Note 12: International climate change commitments**

Ireland supports climate action in developing countries, in conjunction with developed country partners. As part of the outcome of COP 21 in Paris, developed countries were urged to scale-up their level of support with a roadmap to achieve the goal of mobilising US\$100 billion per year by 2020 for climate action in developing countries.

In 2017, Ireland joined the Nationally Determined Contributions (NDC) Partnership, which promotes the exchange of best practice and expertise between developed and developing countries.

Total funding of €7.0 million over 2017 and 2018 provided by the Department of Communications, Climate Action and Environment included support for the Green Climate Fund and the Adaptation Fund, as well as to support the work of the InterGovernmental Panel on Climate Change (IPCC).

The IPCC's landmark Special Report on the impacts of global warming of 1.5°C was published in October 2018, highlighting the urgency of global climate action. In addition to financial contributions, Ireland has supported the IPCC through the hosting of meetings of its various Working Groups in 2017, and again in 2018, to advance the preparation of the forthcoming Special Report on Climate Change and Land, due to be published in 2019.

### **Note 13: Landfill remediation**

Ireland has significantly reduced the amount of waste that goes to landfills. Waste Management in Ireland has moved from being underdeveloped at the time these legacy and historic landfilling practices occurred, to a more modern, managed and balanced network of waste management practices and facilities and with increased co-ordination between agencies.

As a result, the [Landfill Remediation Grant Scheme](#) was established in order to deal with the remediation of closed, licensed, local authority-operated landfills. This is in recognition of the fact that local authorities would not have sufficient resources to fund the full cost of this remediation from their own resources.

#### Potential Key Environmental Impact Indicators

- (i) *Landfill area/number of sites remediated*
- (ii) *Remediation actions*

### **Note 14: Climate initiatives**

Funding provided under this programme to engage research work to support the delivery of the actions contained in the [National Mitigation Plan \(2017\)](#). It also provides funding to support the [National Dialogue on Climate Action](#). The aim of the dialogue is to raise awareness, engagement and motivation to act on the challenges presented by climate change, to help people to discuss, deliberate and maximise consensus on appropriate responses to the climate challenge and to establish networks for people to meet periodically to consider evidence-based inputs on the economic, social, behavioural, environmental and public aspects of climate and energy policy.

### **Note 15: National heritage (National Parks and Wildlife Service)**

This funding is provided to support the operation of Ireland's [National Parks and Wildlife Service](#) which manages the Irish State's nature conservation responsibilities. This includes managing the national parks, nature reserves, the designation and protection of Natural Heritage Areas, Special Areas of Conservation and Special Protection Areas.

#### Potential Key Environmental Impact Indicators

- (i) *Environmental benefits from conservation practices*

### **Note 16: Peatlands restoration and management**

This expenditure supports the management, conservation, revitalisation and restoration of Ireland's peatlands. In practical terms this means protecting currently active raised bogs in the Special Area of Conservation and Natural Heritage Area networks and restoring any degraded raised bog habitat to active raised bog habitat. This funding is provided in line with the [National Raised Bog Special Areas of Conservation Management Plan 2017-2022](#).

#### Potential Key Environmental Impact Indicators

- (i) *Land area of peatlands conserved and restored*

## **Renewable Energy**

### **Note 17: Energy research programmes**

This funding supports the energy policy statistical support unit, which compiles Irish national energy statistics, an energy research programme administered by the Sustainable Energy Authority of Ireland and provides support for renewable energy technologies which are not yet ready for market deployment. A practical example of this is the [ocean energy programme](#).



To note: The renewable electricity schemes, in which substantial investments have been made in Ireland are not funded by the Exchequer. They are funded by a public sector obligation, which is paid by electricity consumers rather than the Exchequer.

#### Potential Key Environmental Impact Indicators

- (i) *Environmental benefits from research energy Programmes*

## Sustainable Water and Wastewater Management

### **Note 18: Rural water programme**

This covers six programmes which are all aimed at environmentally sustainable outcomes:

- supports the amalgamation of group water schemes to improve efficiency;
- fund water conservation;
- support new group water schemes as these are more energy efficient than multiple individual supplies;
- support water conservation practices;
- support innovation and research to develop the efficiency of rural water;
- supports the improvement of individual waste water treatment systems to reduce pollution.

#### Potential Key Environmental Impact Indicators

- (i) *Total number of private group water schemes paid*
- (ii) *Total number of public group water schemes paid*
- (iii) *Total number of private well grants paid*
- (iv) *Total number of septic tank grants paid*

### **Note 19: Irish Water capital expenditure**

[Irish Water](#) is a fully publicly owned, regulated, commercial State body with responsibility for the operation and maintenance of water and wastewater assets. It was established to provide safe, clean, affordable and environmentally compliant water and wastewater services to households and businesses connected to the public networks. This involves treating 1.7 billion litres of drinking water and 1.2 billion litres of wastewater each day.

Water and sewer networks require a multi-billion euro investment programme. The key challenges for the Irish water industry are to:

- Enhance compliance with regulatory standards (both drinking water and wastewater);
- Address the network loss rate and reduce leakage;
- Increase network and treatment capacity to support growth, both social and economic; and
- Develop the resilience required to cater for greater frequency of extreme weather events.

2017 Irish Water capital expenditure figure of €391 million is calculated as follows: Capital expenditure in cash outlay terms was €489 million (per Irish Water Annual Report and Financial Statements 2017). [The Commission for Regulation of Utilities has noted that](#) approximately 80% of Irish Water's allowed revenues were funded through Government subvention related to the domestic sector. Applying this 80% to the €489 million gives the €391.2 million used.

**Table 7: Sample of Irish Water Projects**

Irish Water Projects	2017 & 2018 Expenditure €m	2017 & 2018 Allocated Amount €m
<a href="#">Ringsend Wastewater Treatment Plant</a> (More details in case study section)	52.3	34.1
<a href="#">Vartry</a>	21.5	19.6
<a href="#">Cork Lower Harbour</a>	42.7	24.0
<a href="#">Peamount to Saggart Pump Station and Rising Main</a>	13.4	12.7
<a href="#">Enniscorthy Sewerage Scheme</a>	15.6	11.7

More information about Irish Water projects can be found on the [Irish Water website](#).

Further details are set out in the [Irish Water Strategic Funding Plan 2019](#).

#### Potential Key Environmental Impact Indicators

- (i) *Water Quality: Boil water notice improvements, reduction of water supply schemes on EPA's remedial action list*
- (ii) *Wastewater quality: reduction in No. of untreated agglomerations, licencing compliance*
- (iii) *Conservation (Leakage): Unaccounted for water savings*
- (iv) *Future proofing: new and upgraded water treatment plants, new and upgraded wastewater treatment plants and increased wastewater treatment capacity.*

# Compliance Review by Sustainalytics



## Irish Sovereign Green Bond

**Type of Engagement:** Annual Compliance Review

**Date:** May 8, 2019

**Engagement Leader:** Zach Margolis, zach.margolis@sustainalytics.com, +1 647 695 4341

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### Introduction

In October 2018, Ireland issued its inaugural sovereign green bond aimed at financing projects and programmes that promote the country's transition to a low-carbon, climate-resilient and environmentally sustainable economy; namely, in the areas of built environment/energy efficiency, clean transportation, climate change adaptation, environmentally sustainable management of living natural resources and land use, renewable energy, and sustainable water and wastewater management. In April 2019, Ireland engaged Sustainalytics to provide the compliance review and verification referred to in section 4 of the Irish Sovereign Green Bond Framework.

### Evaluation Criteria

Sustainalytics evaluated the Eligible Green Projects/Programmes which received funding allocations in 2017 and 2018 based on whether they meet the Use of Proceeds and Eligibility Criteria outlined in the Framework. Ireland has committed to impact reporting on an at-least biennial basis, and therefore impact reporting has not been provided or evaluated as part of this engagement.

Table 1 lists the Eligible Green Categories as set out in the Use of Proceeds section of the Framework.

**Table 1**

Eligible Green Categories	Examples of Eligible Green Projects / Programmes
Sustainable Water and Wastewater Management	<ul style="list-style-type: none"> <li>Clean water and wastewater treatment projects.</li> </ul>
Clean Transportation	<ul style="list-style-type: none"> <li>Public transportation initiatives, low emission vehicles incentives and infrastructure, and alternative fuels.</li> <li>Public programmes incentivizing modal shift away from private car use.</li> </ul>
Environmentally Sustainable Management of Living Natural Resources and Land Use	<ul style="list-style-type: none"> <li>Grants, subsidies, and support schemes designed to reduce agricultural environmental impacts.</li> <li>Afforestation, restoration and conservation programmes.</li> </ul>
Renewable Energy	<ul style="list-style-type: none"> <li>Support schemes for renewable heat use and energy storage</li> <li>Research and development for the commercialization of renewable energy technologies.</li> </ul>
Built Environment /Energy Efficiency	<ul style="list-style-type: none"> <li>Support schemes for residential energy efficiency programmes (including heating, retrofit, insulation).</li> <li>Support schemes for energy efficiency programmes for the commercial, public and industrial sector.</li> </ul>
Climate Change Adaptation	<ul style="list-style-type: none"> <li>Flood relief and other risk mitigation programmes.</li> </ul>

### Issuing Entity's Responsibility

For the purposes of this report, Ireland is responsible for providing Sustainalytics with 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 the collection of documentation from the Irish Sovereign Green Bond Working Group and the review of documentation to confirm conformance with the Framework.

Sustainalytics has relied on the information and the facts presented by Ireland with respect to the Eligible Green 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,<sup>1</sup> nothing has come to Sustainalytics' attention that causes us to believe that Ireland has not allocated €1,949.0 million to Eligible Green Projects from net proceeds of €2,983.4 million from the ISGB Issuance as of 31 December 2018 in compliance, in all material respects, with the Eligible Green Project criteria set forth in the Framework.

<sup>1</sup> Sustainalytics limited assurance process includes reviewing the documentation relating to the details of the Eligible Green Projects/Programmes that have received funding allocations, including description of projects, estimated and realized costs of projects, and project impact, which were provided by the Irish Sovereign Green Bond Working Group. The Working Group is responsible for providing accurate information. Sustainalytics has not conducted on-site visits to Eligible Green Projects/Programmes.

## Detailed Findings

**Table 2: Detailed Findings**

Eligibility Criteria	Procedure Performed	Factual Findings	Error or Exceptions Identified
<b>Use of Proceeds Criteria</b>	Verification of the projects funded by the green bond in 2018 and 2018 to determine if projects aligned with the Use of Proceeds Criteria outlined in the Green Bond Framework and above in Table 1.	All projects reviewed complied with the Use of Proceeds criteria. <sup>2 3</sup>	None
<b>Reporting Criteria</b>	Ireland's Framework commits to providing an Eligible Green Project Impact Report on a biennial basis, therefore no impact reporting has been conducted or evaluated at this time.		

<sup>2</sup> Sustainalytics notes that some clean transportation projects include plug-in hybrid electric vehicles; due to their low emissions profile, Sustainalytics considers them to be aligned with the overall objectives of the green bond.

<sup>3</sup> Sustainalytics notes that certain expenditures funded by the green bond are related to supporting the operation and administration of government agencies and other institutions, including the Environmental Protection Agency, the Sustainable Energy Authority of Ireland, and other climate change initiatives. While it is recognized that these programmes are less directly linked to environmental impacts, Sustainalytics views the development of institutional capacity as necessary for the delivery of effective environmental programmes and will indirectly promote the transition to an environmentally sustainable economy.



## Appendix 1: Allocation amounts by programme/scheme

The Irish Sovereign Green Bond Allocation Report has disclosed that the following programmes received allocation from the green bond.

Eligible Green Category	Project / Programme	ISGB Proceeds Allocated amount (€m)
Built Environment/ Energy Efficiency	Sustainable energy programmes	142.1
Built Environment/ Energy Efficiency	SEAI admin and general expenses	12.7
Built Environment/ Energy Efficiency	Estate regeneration - social housing improvement	54.6
Clean Transportation	Carbon reduction	0.7
Clean Transportation	LEV Incentivisation	31.0
Clean Transportation	Public service provision payment	351.6
Clean Transportation	Public and Sustainable transport investment programme	485.1
Clean Transportation	Greenways	2.6
Climate Change Adaptation	Flood risk management	73.7
Environmentally Sustainable Management of Living Natural Resources and Land Use	Forestry and bioenergy	91.0
Environmentally Sustainable Management of Living Natural Resources and Land Use	Environmental Protection Agency	39.1
Environmentally Sustainable Management of Living Natural Resources and Land Use	International climate change commitments	5.0
Environmentally Sustainable Management of Living Natural Resources and Land Use	Landfill remediation	11.4
Environmentally Sustainable Management of Living Natural Resources and Land Use	Climate initiatives	0.3
Environmentally Sustainable Management of Living Natural Resources and Land Use	National heritage (National Parks and Wildlife Service)	17.4
Environmentally Sustainable Management of Living Natural Resources and Land Use	Peatlands restoration and management	0.6
Renewable Energy	Energy research programmes	9.7
Sustainable Water and Wastewater Management	Rural water programme	42.2
Sustainable Water and Wastewater Management	Irish Water capital expenditure	578.2
<b>TOTAL<sup>4</sup></b>		<b>1,949.0</b>

<sup>4</sup> Totals may not sum due to rounding

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For more information, visit [www.sustainalytics.com](http://www.sustainalytics.com)

Or contact us [info@sustainalytics.com](mailto:info@sustainalytics.com)





# Case Study



# Case Study

## Ringsend Wastewater Treatment Plant Upgrade Project

Irish Water is investing over €400 million in the staged upgrading of Ringsend Wastewater Treatment Plant. This investment will allow the plant to treat the increasing volumes of wastewater.

Will treat the wastewater arriving at the site to the required standard and capacity

Will improve water quality in the Lower Liffey Estuary

Will support economic and social development



### Background

Wastewater from Dublin has been treated in Ringsend since 1906. The current plant is the largest wastewater treatment plant (WWTP) in Ireland and was built in 2005 to a design capacity of 1.64 million population equivalent (PE).

Ringsend WWTP currently discharges treated wastewater into the Lower Liffey Estuary via an outfall located approximately 1km from the facility. The Lower Liffey Estuary was designated as a (nutrient) sensitive waterbody under the Urban Wastewater Treatment Directive (UWWTD). The UWWTD requires the WWTP to reduce nutrients (nitrogen, phosphorus) to below a specified level before discharging into a nutrient sensitive waterbody. Subject to planning permission, Irish Water will upgrade the WWTP to facilitate the use of Aerobic Granular Sludge (AGS) technology, an advanced nutrient removal technology, in order to meet the standards required under the UWWTD.

Heat and power are currently generated via anaerobic digestion using onsite feedstock.

### Why is this project needed?

The Ringsend WWTP is currently operating at levels in excess of its intended design capacity, with wastewater of up to 1.9 million PE requiring treatment.

In order to treat the current wastewater load to the required UWWTD standards and to allow for future industrial and population growth, the plant must be upgraded.

## Innovation

*The proposed upgrade project uses innovative technology to enable the Ringsend WWTP to deliver a more sustainable, safe, and environmentally sensitive treatment solution.*

In 2012, An Bord Pleanála granted planning approval to Dublin City Council to upgrade the existing facility and increase its capacity based on technologies available at the time. This included an extension in secondary treatment capacity as well as the construction of a 9km long sea outfall tunnel to relocate the discharge of treated wastewater from the Ringsend WWTP out into Dublin Bay.

In 2014, Irish Water took over responsibility for providing water and wastewater services in Ireland. The need for the Ringsend upgrade project was assessed and reaffirmed. All elements of the 2012 planning approval were reviewed and AGS technology was identified by Irish Water as ideally suited and subsequently proven for use at the Ringsend WWTP.

Using AGS technology allows for a greater amount of wastewater to be treated to a higher standard within the current Ringsend WWTP. This means that the treated wastewater leaving the plant will be of a much higher quality than it would have been based on the original proposal included in the 2012 planning approval. This higher quality treated wastewater will be suitable for discharge at the current outfall location, in compliance with the UWWTD, negating the need for the 9km outfall tunnel originally proposed in the 2012 planning approval.

The project also proposes the provision of a new phosphorous recovery facility at Ringsend WWTP. This is an advanced technology not previously used in Ireland and subject to planning permission, it will enable the further recovery of phosphorus from the effluent prior to discharging into the Lower Liffey Estuary.

## Planning

In June 2018, Irish Water submitted an application for strategic infrastructure development to An Bord Pleanála to upgrade the Ringsend WWTP. This proposed upgrade of the WWTP will enable future population growth and ensure the plant operates to the highest possible environmental standards.

The planning application to further progress the upgrade of the Ringsend WWTP seeks permission for works required to facilitate the use of the innovative AGS technology; to omit the long sea outfall; to upgrade the sludge treatment facilities; and to provide for a Regional Biosolids Storage Facility in Newtown, Dublin 11. Biosolids are a treated by-product of the wastewater treatment process that need to be stored on a temporary basis each year until they are applied to lands during the Spring and Autumn planting seasons.

## What is involved as part of the Ringsend WWTP Upgrade Project?

The project includes the following:

- Additional secondary treatment capacity through the construction of a new 400,000 PE treatment facility;
- Proposed works to facilitate the use of AGS technology in the existing secondary treatment tanks, increasing the overall plant capacity to 2.4 million PE;
- Proposed expansion of the plant's sludge treatment facilities to match the overall increase in wastewater treatment capacity;
- Proposed provision of a new phosphorous recovery process;
- Proposed provision of additional odour control facilities;
- Proposed increase in the flow through the plant by approx. 20% thereby increasing the amount of wastewater that can be treated and reducing the level of storm overflows which occur during heavy rainfall events.



### What has happened so far?

Irish Water has invested over €100 million since 2014 in upgrading the Ringsend WWTP. This includes design, planning application, advance works to prepare the site for the upgrade, upgrades to the odour treatment facilities, trialling and proving of AGS technology and investigative works to inform the project.

It also includes initial spend incurred on the new capacity upgrade facility (a contractor was appointed in December 2017 and work commenced in February 2018). With a design capacity of 400,000 PE, this capacity upgrade, when constructed, will itself be the second largest secondary wastewater treatment facility in Ireland. In 2017 and 2018, Irish Water spent a total of €52.3 million in the Ringsend WWTP as set out in the Table 7.



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Government of Ireland