SUSTAINABLE ENERGY AUTHORITY OF IRELAND

First Look: Ireland's Energy Supply and Security of Supply in 2024

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Sustainable Energy Authority of Ireland
SEAI is Ireland's national energy authority investing in, and delivering, appropriate, effective and sustainable solutions to help Ireland's transition to a clean energy future. We work with the public, businesses, communities and the Government to achieve this, through expertise, funding, educational programmes, policy advice, research and the development of new technologies.

SEAI is funded by the Government of Ireland through the Department of Climate, Energy and the Environment.

Contents

1 Background and Scope

This note is part of the *'First Look'* series of publications from the Energy Statistics Team in SEAI. These publications aim to rapidly disseminate key energy insights from SEAI's data releases, addressing the need for timely and trusted data to inform evidence-led energy policy and determine the pace of progress against binding energy and climate targets.

The *First Look* series emphasises quantitative reporting over descriptive reporting. They contain plots and tables to quantify observed trends in energy and emissions, rather than speaking to the policy, behaviour, technology, or market forces that may have driven those trends. Fuller context and explanation for the trends identified in *First Look* publications can be found in SEAI's definitive annual reports, such as *Energy in Ireland*, or the *National Energy Projections*.

This *First Look* note provides key insights on Ireland's energy supply[1] and the security of that energy supply in 2024. It is primarily based on data sourced from the 2024 Interim National Energy Balance, published by SEAI on 21st of May 2025. The first chapters of this note summarise the imports, exports, and indigenous production of energy in Ireland, the energy-related emissions, levels of installed capacity for wind and solar generation, the international sources of our heating and transport oil-products, and the level of national oil reserves held. The note includes a comprehensive set of technical appendices that provide additional details and tabulated data relevant to energy supply and the security of energy supply in Ireland over the last decade.

This *First Look* note from SEAI speaks specifically to energy supply data, and data related to the security of that energy supply. A more comprehensive assessment of Ireland's overall energy security would require additional insights, considerations, and contexts beyond the scope of this note, such as:

- Risks of supply chain and market disruptions
- Physical interruptions to supply and delivery
- Age, maintenance, and appropriateness of energy infrastructure
- Integration and balancing of supply and demand distributions
- Capacity and storage planning
- Long-term sustainability of the energy system
- Affordability of energy to all sectors of the economy and citizenry

Subject matter expertise and data on these broader energy security considerations sits outside of SEAI, in other national agencies and regulators, such as:

- *Eirgrid*, *ESB Networks*, and *Gas Networks Ireland* (GNI) with responsibility for the operation and maintenance of the national electricity and gas grids
- The *Commission for Regulation of Utilities* (CRU) with responsibility for regulating the use and connection of the national electricity and gas grids
- The *National Oil Reserve Agency* (NORA) with responsibility for maintaining Ireland's emergency and commercial oil stocks in line with European and international obligations, and administering Ireland's Renewable Transport Fuel Obligation (RTFO)
- The *Environmental Protection Agency* (EPA) with responsibility for regulating emissions from electricity generation plants and from heavy industry

Combining the security of energy supply insights from this note with the broader energy security insights and considerations available from other national agencies would provide an energy security overview[2] that aligns to the International Energy Agency's (IEA) definition of energy security as *"the uninterrupted availability of energy at an affordable price"*.

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[1] This note does not extend to energy *demand* insights for 2024, because a sectoral breakdown of energy demand is not yet available. Demand-side data will become available with the publication of the full national energy balance for 2024 in early-September 2025. This will also allow for first estimates of renewable energy share (RES) results for electricity, transport, and heating.

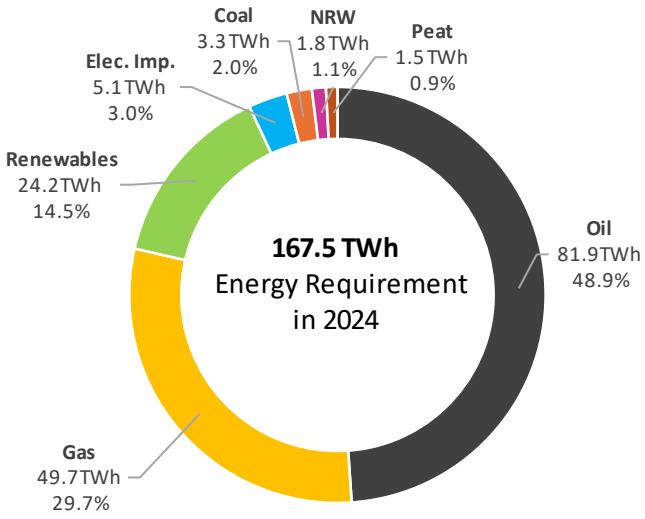
[2] In November 2023, the Department of the Environment, Climate and Communications (DECC) published the *'Energy Security in Ireland to 2030, Energy Security Package'*, highlighting where Ireland can enhance energy security, and providing context and possible approaches to making those enhancements - https://www.gov.ie/en/publication/5c499-energy-security-in-ireland-to-2030/

2 Trends in Ireland's Energy Requirements

2.1 Total Primary Energy Requirement

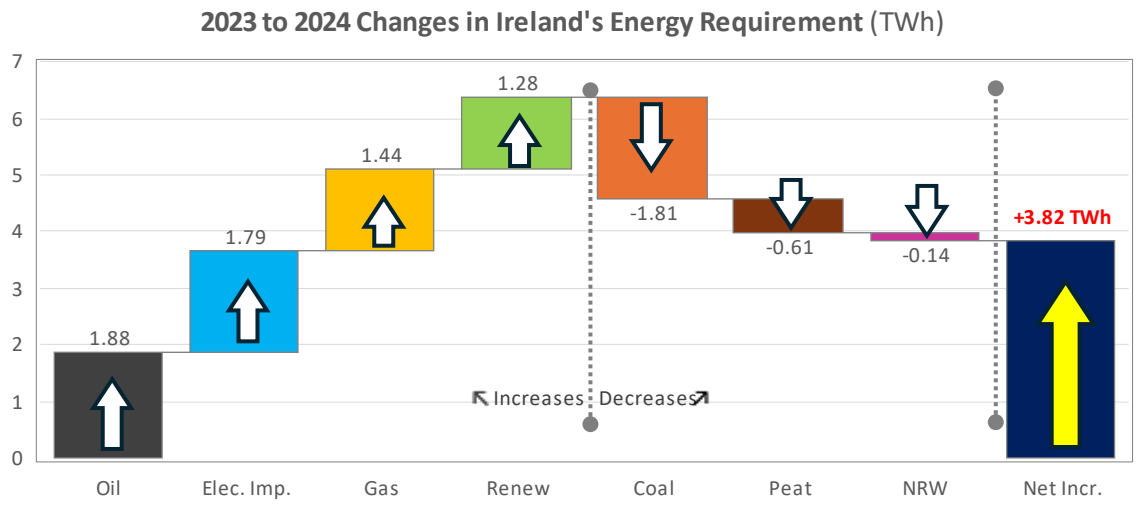
In 2024, Ireland's total primary requirement[3] was 167.5 TWh. Over three-quarters of this value came from the sum of oil (48.9%) and natural gas (29.7%) energy requirements. Renewables accounted for 14.5% of Ireland's energy requirement in 2024, up from 14.0% in 2023.

Fig 2.1 - Ireland's 2024 national energy requirement by energy product (elec. imp. and NRW stand for net imported interconnector electricity and non-renewable wastes, respectively).



In 2024, Ireland's overall energy requirement increased by 3.82 TWh. The 2024 primary energy requirement saw increases in oil (+1.88 TWh), the net-import of interconnector electricity (+1.79 TWh), natural gas (+1.44 TWh) and renewables (+1.28 TWh). Conversely, there were decreases in coal (-1.81 TWh), peat (-0.61 TWh) and non-renewable wastes (-0.14 TWh).

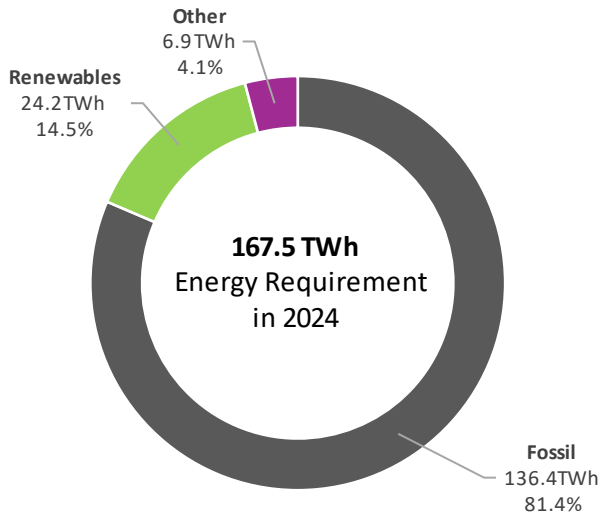
Fig 2.2 - 2023 to 2024 changes in Ireland's total energy requirement by energy product ('NRW' stands for non-renewable wastes).



[3] Total Primary Energy Requirement (TPER) refers to the total amount of energy needed to meet a country's energy demands, including the energy used in the transformation of raw fuels into usable energy forms (like electricity) and the energy consumed by end-users.

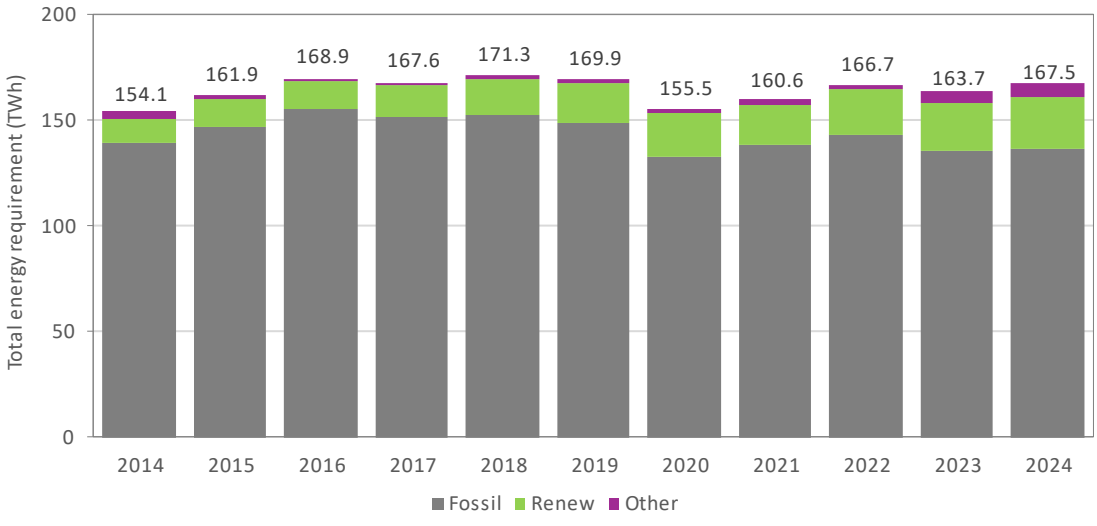
In 2024, Ireland's total primary energy requirement remained heavily fossil dependent, with 81.4% of energy requirement satisfied by fossil fuels, 14.5% from renewables and 4.1% from other sources, which included non-renewable wastes and the net-import of electricity across international interconnectors.

Fig 2.3 - Ireland's 2024 total energy requirement by energy type, *i.e.* fossil fuels, renewable energy, and other sources ('other sources' include non-renewable wastes and net-import of electricity).



Overall, Ireland's total primary energy requirement in 2024 was 2.3% higher than in 2023.

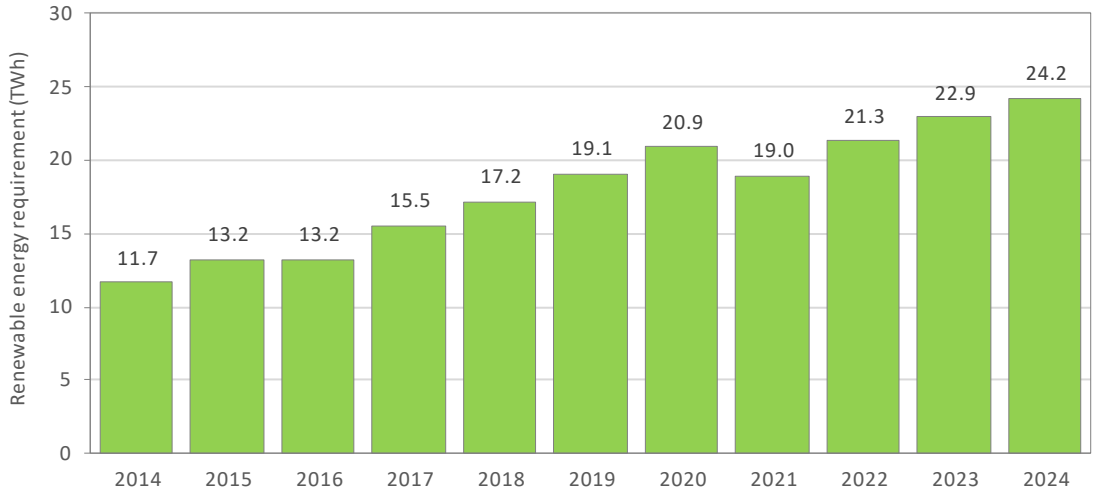
Fig 2.4 - 10-year time series of Ireland's total energy requirement by energy type.



2.2 Renewable Primary Energy Requirement

In 2024, Ireland's renewable energy requirement was 24.2 TWh, up 5.6% from 22.9 TWh in 2023. This set a record for renewable energy use in Ireland, both in absolute and relative terms.

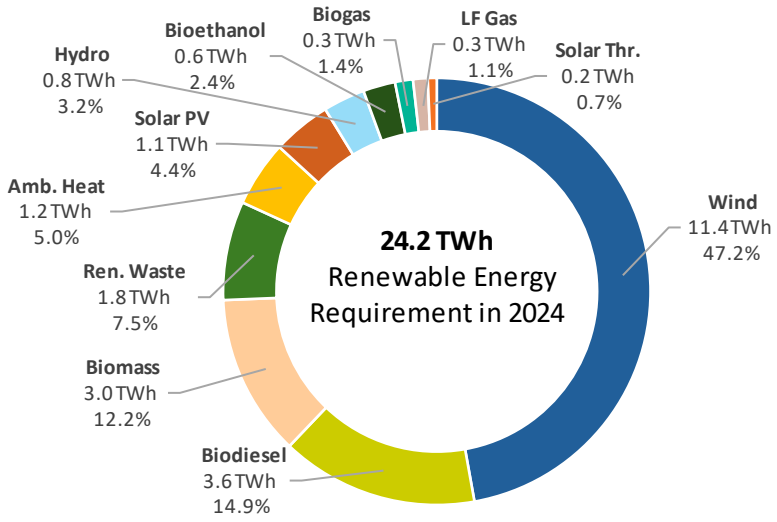
Fig 2.5 - 10-year time series of Ireland's renewable energy requirement.



In 2024, wind accounted for just under half (47.2%) of Ireland's renewable energy, followed by biodiesel (14.9%), biomass (12.2%) and renewable wastes (7.5%).

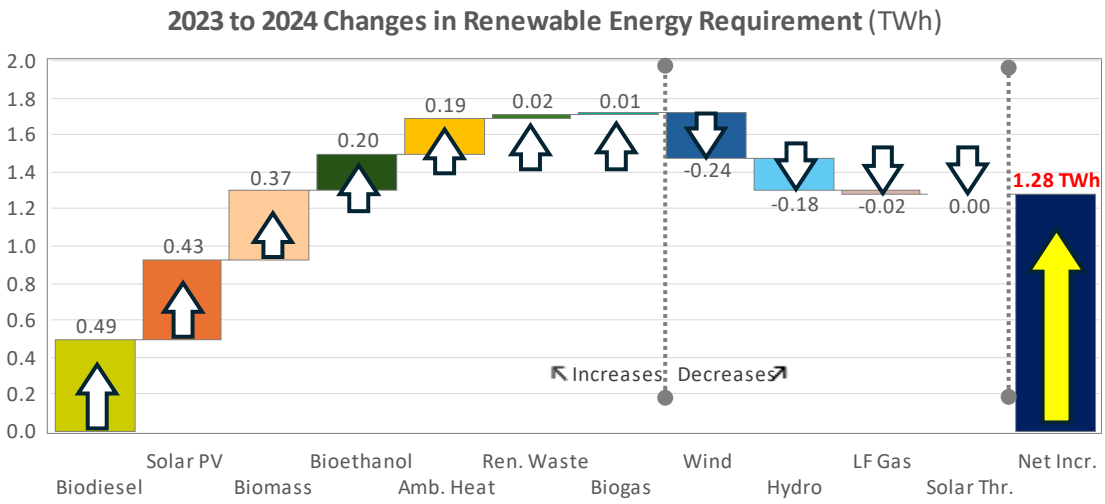
The ambient heat delivered by the heat-pumps accounted for 5.0% of renewable energy, while solar-PV (both from utility-scale solar farms and the panels installed on homes and businesses across the country) accounted for 4.4% of renewable energy.

Fig 2.6 - Ireland's 2024 renewable energy requirement by energy sub-product.



Ireland's 2024 renewable energy requirement saw increased used of biodiesel (+0.49 TWh), solar-PV (+0.43 TWh) and biomass (+0.37 TWh), and decreases in wind (-0.24 TWh), hydro (-0.18 TWh) and landfill gas (-0.02 TWh).

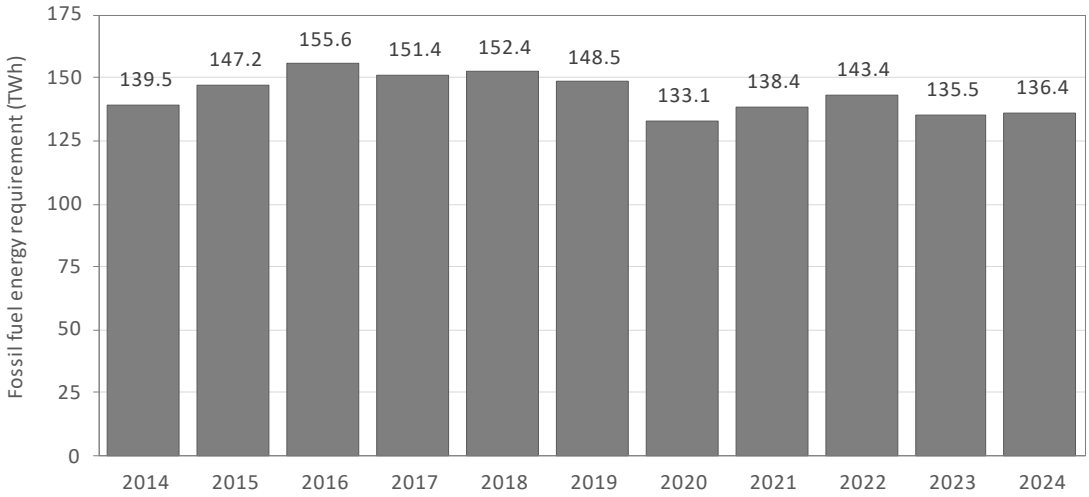
Fig 2.7 - 2023 to 2024 changes in Ireland's renewable energy requirement by energy sub-product.



2.3 Fossil Fuel Primary Energy Requirement

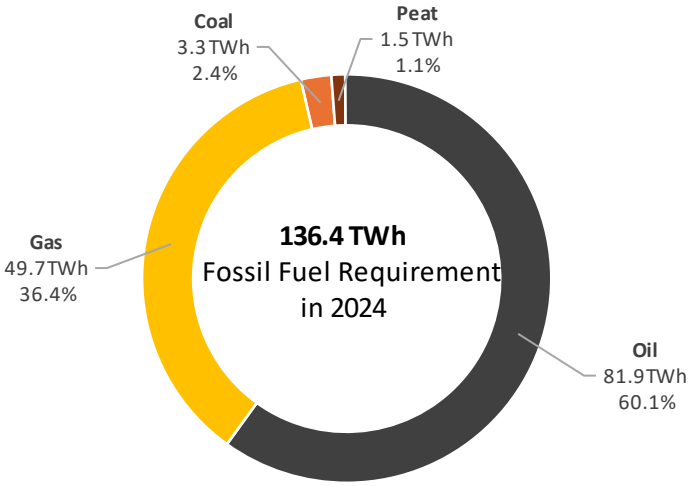
In 2024, Ireland's fossil fuel energy requirement was 136.4 TWh, up 0.7% from 135.5 TWh in 2023.

Fig 2.8 - 10-year time series of Ireland's fossil fuel energy requirement.



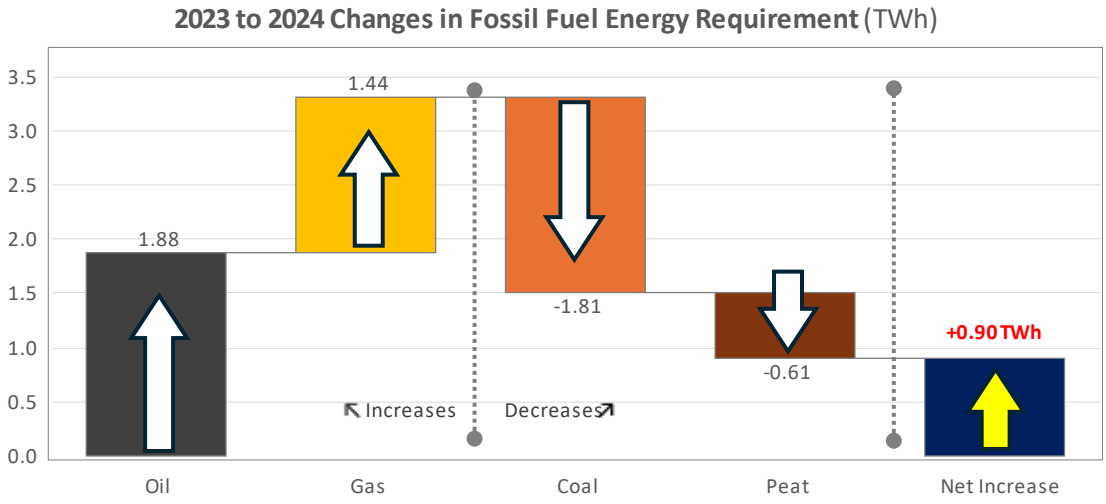
Oil accounted for just over three fifths (60.1%) of Ireland's fossil fuel energy requirement, followed by natural gas (36.4%), coal (2.4%) and peat (1.1%).

Fig 2.9 - Ireland's 2024 fossil fuel energy requirement by energy sub-product.



In 2024, Ireland's fossil fuel energy requirement saw increases in oil (+1.88 TWh) and natural gas (+1.44 TWh) and decreases in coal (-1.81 TWh) and peat (-0.61 TWh).

Fig 2.10 - 2023 to 2024 changes in Ireland's fossil fuel requirement by sub-product.



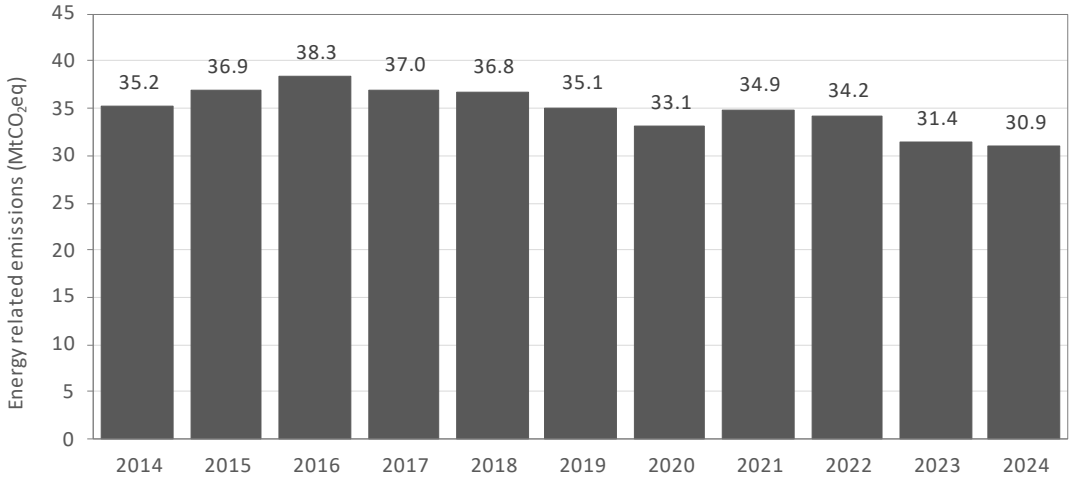
3 Trends in Energy-Related Emissions

The energy-related emission estimates in this chapter are calculated by SEAI, based on the best available data in the 2024 interim national energy balance. As this note was being finalised for publication, these emission estimates were confirmed by an official data-release from the Environmental Protection Agency (EPA) - *Ireland's provisional greenhouse gas emissions for 1990-2024* – which was published in July 2025.

3.1 Energy-Related Emissions

SEAI estimates that Ireland's national energy-related emissions[4] in 2024 were 30.9 $MtCO_2eq$, down by -1.3% on the previous year, and reaching their lowest level in over 30 years.

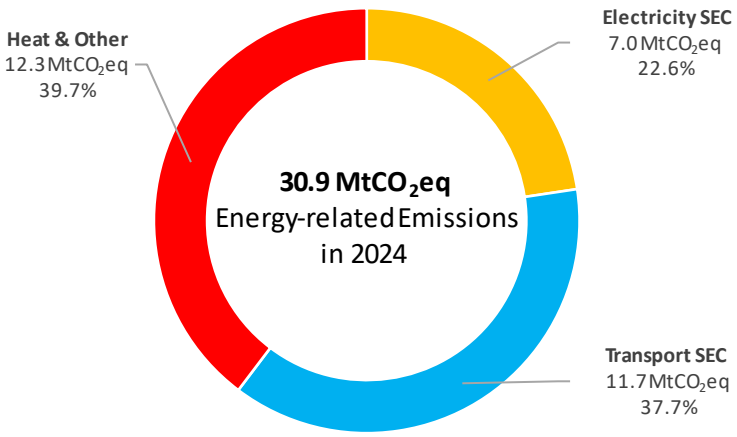
Fig 3.1 - 10-year time series of Ireland's total energy-related emissions.



[4] Ireland's national and sectoral emission totals do not include emissions associated with international aviation or maritime transport, which are calculated and reported separately in accordance with guidance from United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC).

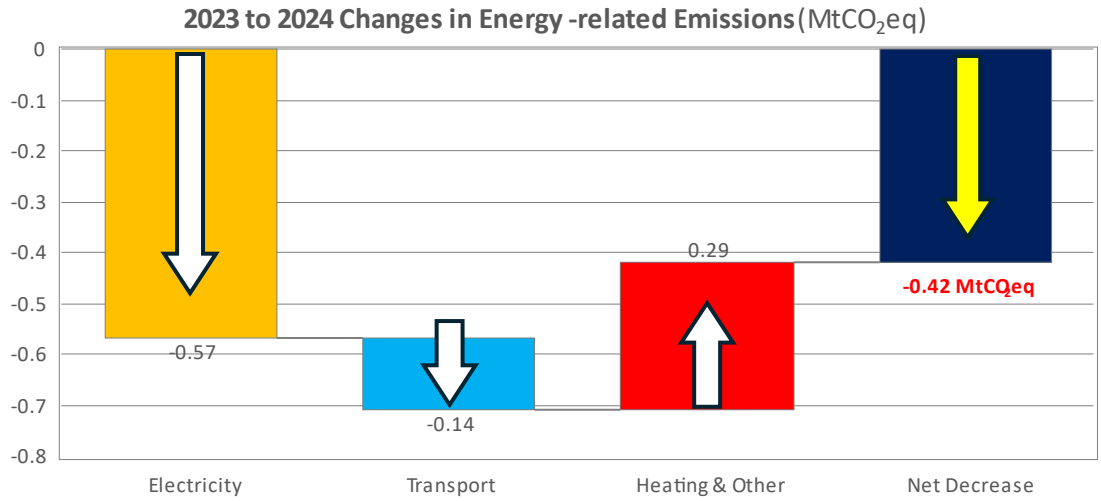
Of the 30.9 $MtCO_2eq$ of energy-related emissions in 2024, 22.6% were due to the electricity emissions[5], 37.7% were due to the transport emissions[6], and the remaining 39.7% were due to heating and other energy-related emissions

Fig 3.2 - Ireland's 2024 total energy-related emissions by SEC sector.



SEAI estimates that Ireland's energy-related emissions dropped by -0.42 $MtCO_2eq$ in 2024 when compared to 2023. The main driver of the -0.42 $MtCO_2eq$ reduction in 2024 was a reduction in emissions associated with electricity generation. The electricity and transport SEC emissions fell by -0.57 $MtCO_2eq$ and -0.14 $MtCO_2eq$, respectively, but this was partially counterbalanced by an increase in heating and other energy-related emissions.

Fig 3.3 - 2023 to 2024 changes in Ireland's total energy-related emissions by SEC sector.

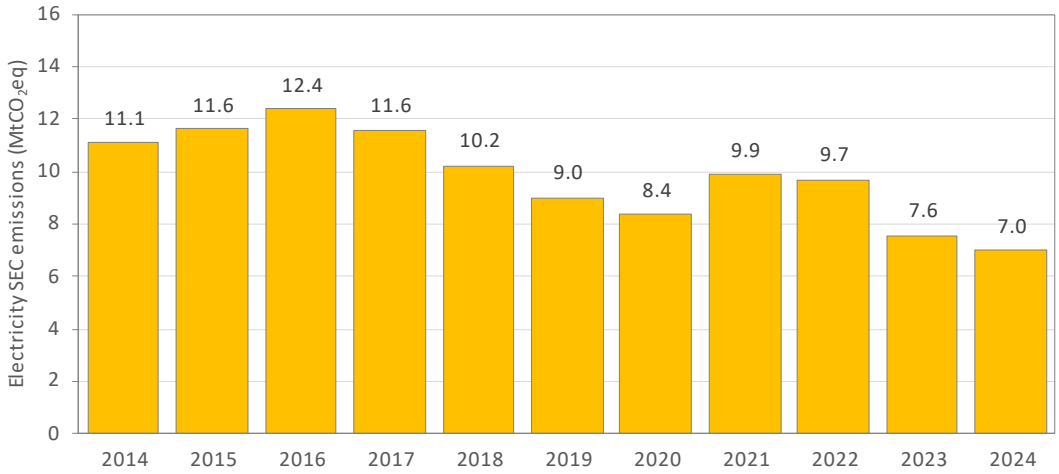


[5] As per the EPA's GHG inventory, electricity sector emissions under the carbon budgets are given by the sum of emissions from (1) public electricity and heat production (IPCC code 1.A.1.a), (2) solid fuel and other energy industries (IPCC code 1.A.1.c), and (3) fugitive emissions (IPCC code 1.B.1 & 1.B.2). As a result, the electricity emission in the carbon budgets include no emissions from auto-producers (including CHP plants), but do include the emissions associated with peat-briquetting, and fugitive emissions, such as the emissions associated with the production, processing, transmission, and storage of natural gas, etc.

[6] As those are defined in the carbon budgets.

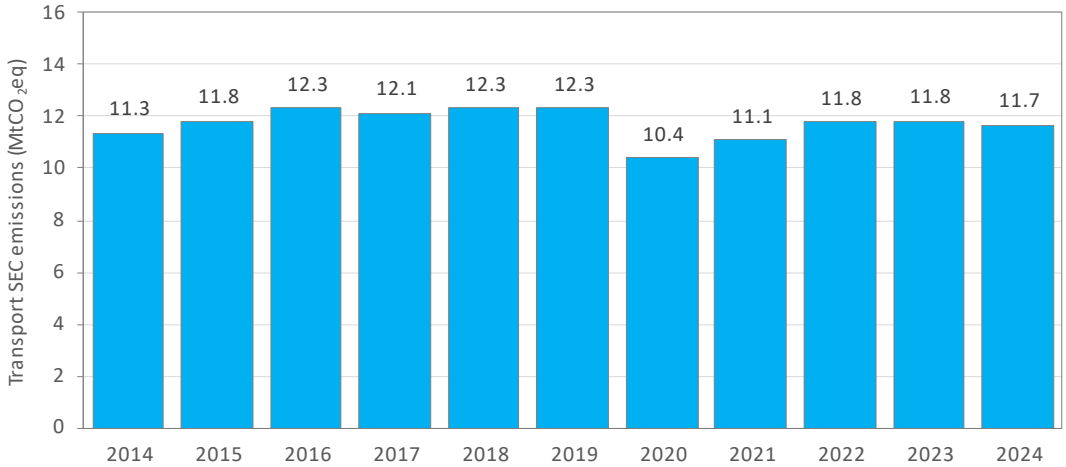
SEAI estimates that emissions from electricity generation in Ireland in 2024 were 7.0 $MtCO_2eq$, down -7.5% on 2023-levels. Emissions from electricity generation fell due to reduced use of fossil fuel generation in Ireland, due in turn to an increased supply of renewable generation, and increased use of electricity imported through international interconnectors.

Fig 3.4 - 10-year time series of Ireland's electricity-SEC emissions.



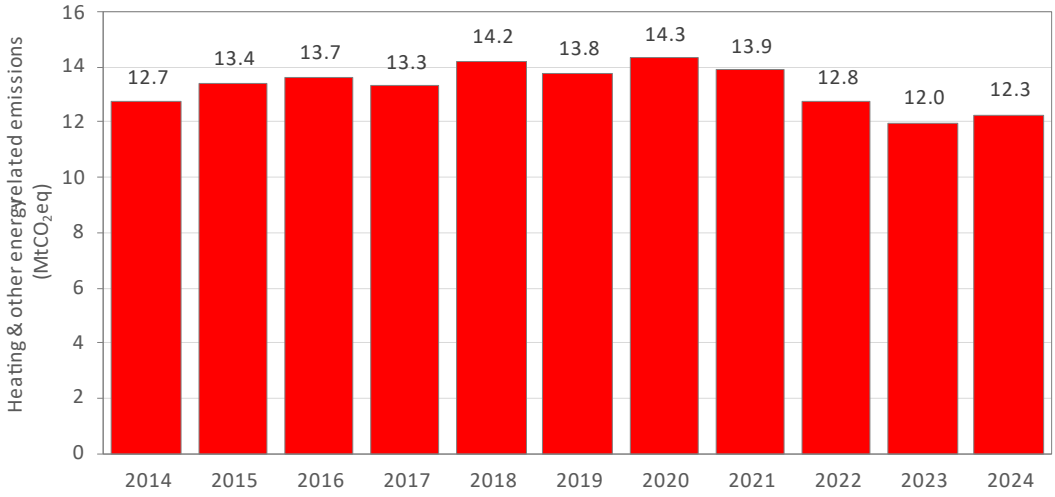
SEAI estimates that Ireland's national transport emissions, which exclude international aviation and navigation, were 11.7 $MtCO_2eq$, down -1.2% on 2023-levels.

Fig 3.5 - 10-year time series of Ireland's transport-SEC emissions.



SEAI estimates that emissions from heating[7] were12.3 $MtCO_2eq$, up by +2.4% on 2023-levels.

Fig 3.6 - 10-year time series of Ireland's heating and other energy-related emissions.

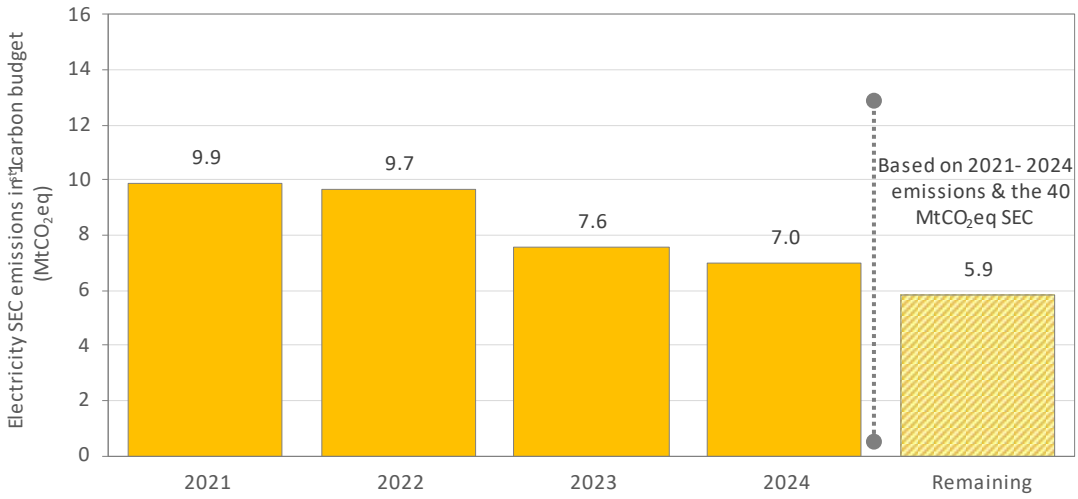


[7] Emissions from heating are defined as total energy-related emissions, less electricity emissions, less transport emissions.

3.2 Electricity and Transport Emissions in the First Carbon Budget

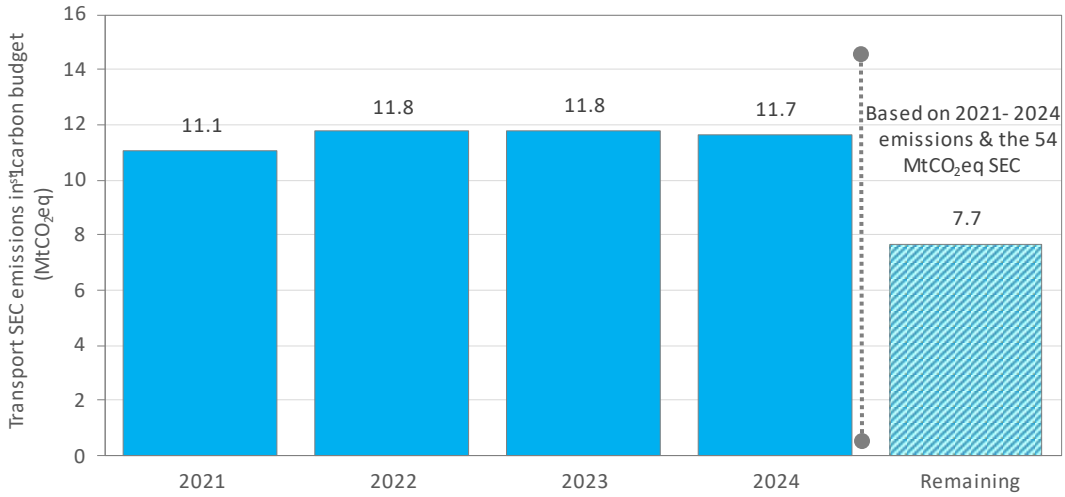
SEAI estimates that at the end of 2024, four years through its first 5-year carbon budget, Ireland's electricity sector has emitted 34.1 $MtCO_2eq$ of its 40 $MtCO_2eq$ sectoral emission ceiling (SEC). This means that the electricity sector has already emitted 85% of its 5-year sectoral emission ceiling, at the 80% point of the 2021-2025 carbon budget. When these estimates are confirmed by the EPA's final *National GHG Inventory Report*, then the electricity sector has only 5.9 $MtCO_2eq$ of allowable emissions left for the last year of this carbon budget[8].

Fig 3.7 - Electricity-SEC emissions in the first carbon budget (2021-2025)



SEAI estimates that at the end of 2024, four years through its first 5-year carbon budget, Ireland's transport sector has emitted 46.3 $MtCO_2eq$ of its 54 $MtCO_2eq$ sectoral emission ceiling. This means that the transport sector has already emitted 86% of its 5-year sectoral emission ceiling, at the 80% point of the 2021-2025 carbon budget. When these estimates are confirmed by the EPA's final *National GHG Inventory Report*, then the transport sector has only 7.7 $MtCO_2eq$ of allowable emissions left for the last year of this carbon budget.[9]

Fig 3.8 - Transport-SEC emissions in the first carbon budget (2021-2025)



[8] As this note was being finalised for release, the EPA published *Ireland's Provisional Greenhouse Gas Emissions 1990-2024* which provisionally confirmed that the electricity sector has 5.9 MtCO2eq of allowable emissions left for the last year of the first carbon budget.
[9] As this note was being finalised for release, the EPA published *Ireland's Provisional Greenhouse Gas Emissions 1990-2024* which provisionally confirmed that the transport sector has 7.7 MtCO2eq of allowable emissions left for the last year of the first carbon budget.

4 Trends in Electricity Supply

4.1 Electricity Supply by Source, Type and Stream

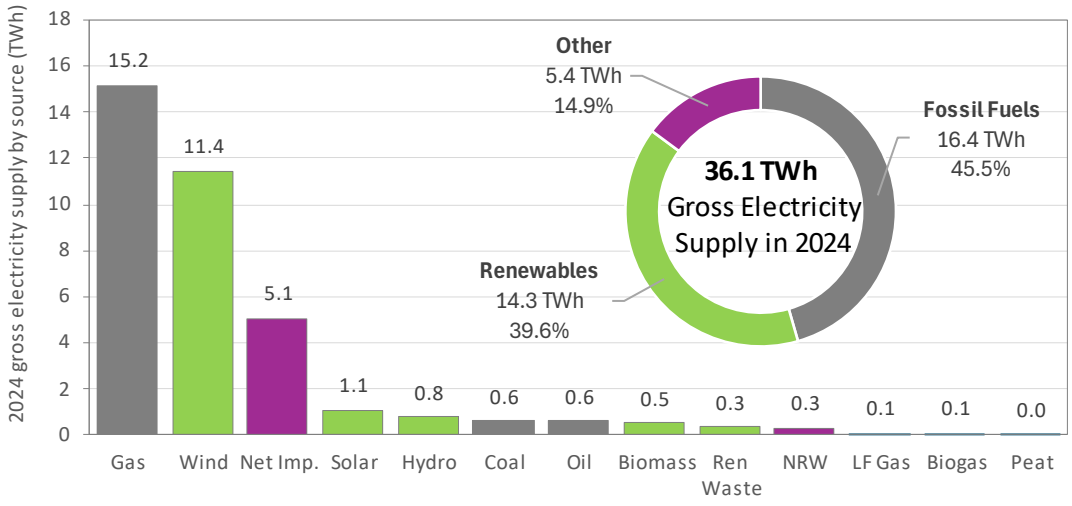
In 2024, 39.6% of Ireland's gross electricity supply (which is defined as the sum of gross electricity production and net imports, less electricity output from pumped and battery storage) was renewable.

Please note that the ratio of gross electricity that is renewable is not one-to-one equivalent to the 'Renewable Energy Share of Electricity' (RES-E) metric, which is calculated in accordance with the EU's Renewable Energy Directive and accompanying methodology[10]. The RES-E metric is based on capacity calculations, multi-year averaging, *etc.* Ireland's 2024 RES-E will be calculated following the publication of the full National Energy Balance in September 2025.

The three largest sources of electricity supply in 2024 were natural gas (15.2 TWh), wind (11.4 TWh), and the net import of interconnector electricity (5.1 TWh). Combined, these three sources of electricity accounted for 87.8% of Ireland's electricity supply.

Net imports of electricity accounted for 14.0% of the gross electricity supply in 2024, compared to 9.5% of the electricity supply in 2023.

Fig 4.1 - Ireland's 2024 supply of electricity (gross) by energy source and type.

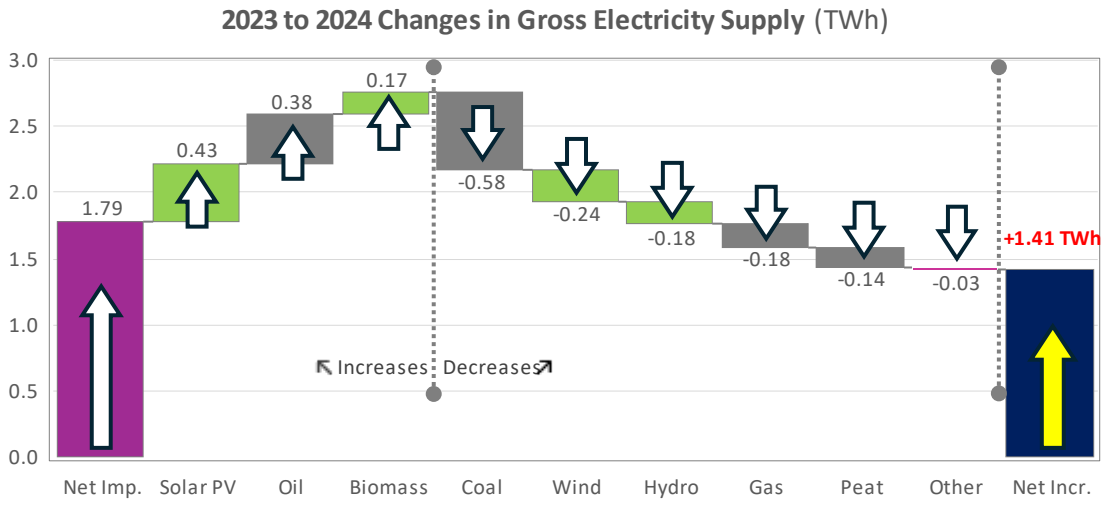


[10] The RES-E calculation differs from the gross final consumption value because it includes additional adjustments, including the normalisation of wind and hydro production, and a formal accounting for the sustainability status of various biomass fuels.

Although Ireland's gross electricity supply increased by +1.41 TWh or +4.1% in 2024, there was less electricity generated in Ireland in 2024 than in 2023.

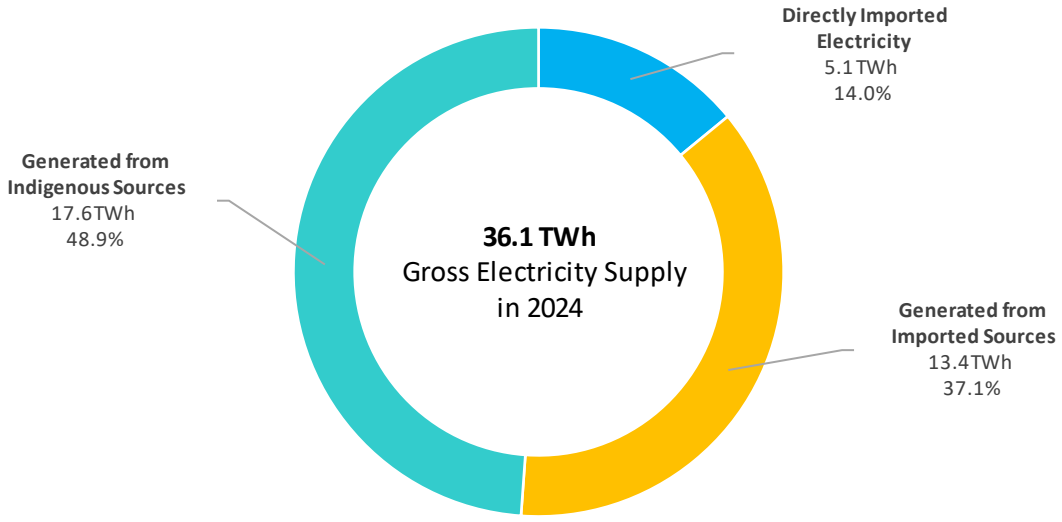
In 2024, there was a +0.18 TWh increase in electricity generation from renewables, and a +1.79 TWh increase from net imports of electricity compared to 2023. In 2024, Ireland generated -0.52 TWh less electricity from fossil fuels and -0.03 TWh less electricity from non-renewable wastes than in 2023.

Fig 4.2 - 2023 to 2024 changes in Ireland's gross supply of electricity by energy source.



In 2024, the net imported electricity accounted for 14.0% of Ireland's gross electricity supply. Indigenous generation of electricity from imported energy sources[11] (which is defined as the electricity generated in Ireland from imported gas, coal, oil, and biomass) accounted for 37.1% of gross electricity supply. Indigenous generation of electricity from indigenous sources (which is defined as the electricity generated in Ireland from indigenous energy sources like wind, solar, and indigenous natural gas, and biomass) accounted for 48.9% of gross electricity supply.

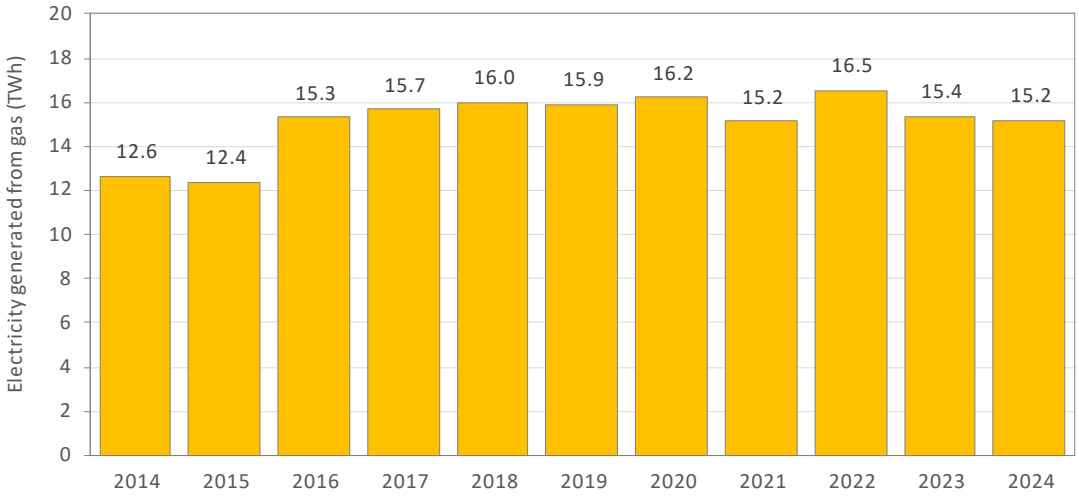
Fig 4.3 - Ireland's 2024 gross electricity supply breakdown by stream.



[11] Where electricity is generated from a source that comes from a mixture of imported supply and indigenous production, *e.g.* in the case of natural gas, a representative proportion of the generated electricity is assigned to both 'electricity from imported energy sources' and 'electricity from indigenous sources'.

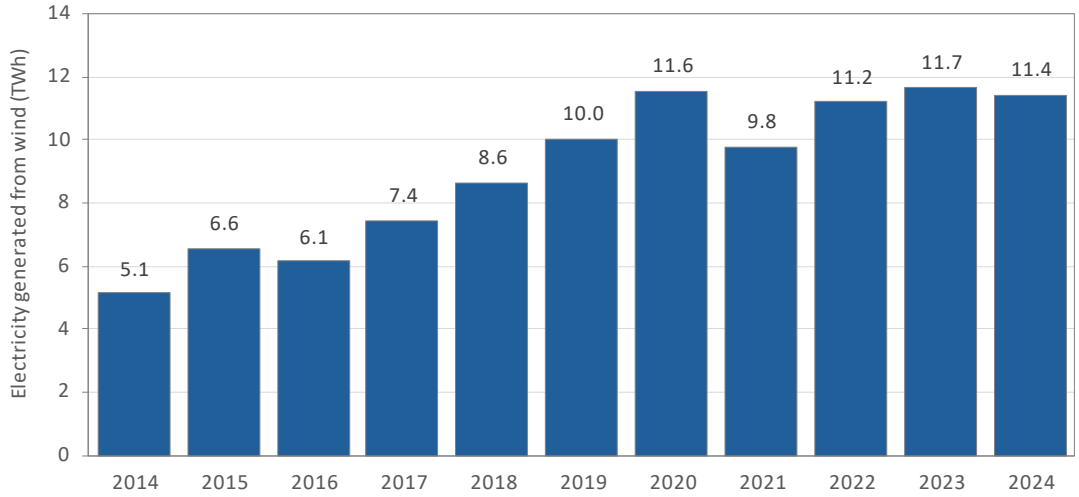
In 2024, 15.2 TWh of electricity generated in Ireland came from natural gas. Electricity generated from natural gas decreased by -0.18 TWh or -1.1% in 2024, compared to the previous year.

Fig 4.4 - 10-year time series of electricity supply from natural gas generation.



In 2024, wind accounted for 11.4 TWh of electricity generated in Ireland. Electricity generation from wind decreased by -0.24 TWh or -2.1% in 2024, compared to the previous year.

Fig 4.5 - 10-year time series of electricity supply from wind generation.



4.2 Net Imports of Electricity across International Interconnectors

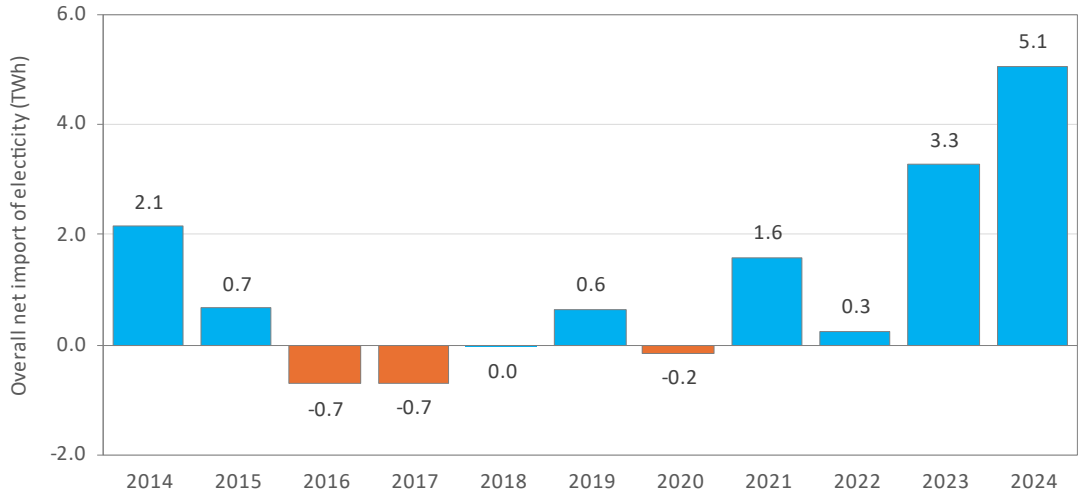
The North-South (NS) and East-West (EWIC) interconnectors allow for international trade and balancing of electricity flows to-and-from Ireland and Northern Ireland (within the integrated Single Electricity Market, or I-SEM) and mainland Great Britain (outside the I-SEM)[12].

The value of net imports of electricity is given by the sum of positive-flow imports and negative-flow exports. In 2024, Ireland was a net importer of electricity. Net imports of electricity across interconnectors increased from 3.3 TWh in 2023 to 5.1 TWh in 2024, setting an annual record for the use of imported electricity. In 2024, Ireland imported approx. 25 times more electricity than it exported.

In 2024, 53.3% of Ireland's electricity imports came across the East-West interconnector, and 46.7% of electricity imports came across the North-South interconnector. 66.3% of Ireland's electricity exports went *via* the East-West interconnector and 33.7% of electricity exports went *via* the North-South interconnector.

The *Greenlink* interconnector, connecting Wexford with Wales, entered its '*commercial operations*' phase at the beginning of 2025, with capacity available through the implicit SEM-GB 'Intra Day 1 Auction' from 29th January 2025.

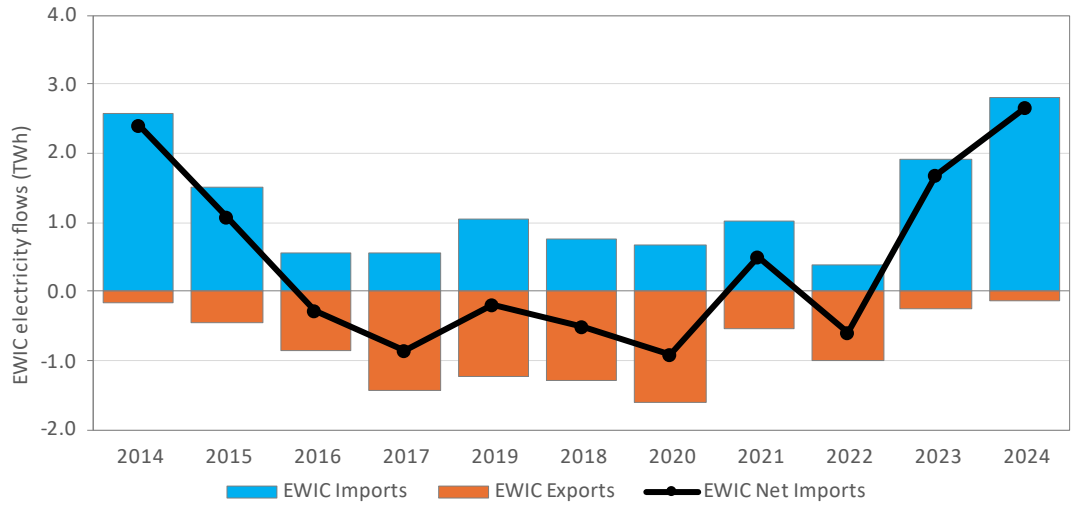
Fig 4.6 - 10-year time series of overall net imports of electricity into Ireland.



[12] The Moyle interconnector connects the I-SEM in Northern Ireland with the mainland Great Britain market. As the endpoints of this interconnector are not within the national boundary of the Republic of Ireland, electricity flows across this interconnector are not explicitly captured in Irish national statistics.

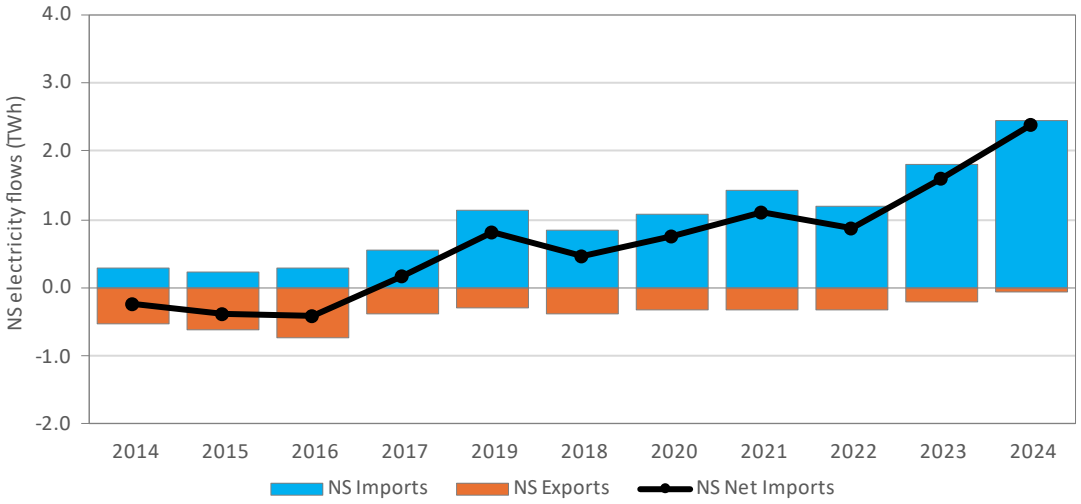
In 2024, Ireland net-imported 2.7 TWh of electricity across the East-West interconnector. In 2024, Ireland imported approx. 20 times more electricity than it exported across the East-West interconnector.

Fig 4.7 - 10-year time series of net imports of electricity into Ireland across the East-West Interconnector.



In 2024, Ireland net-imported 2.4 TWh of electricity across the North-South interconnector. In 2024, Ireland imported approx. 35 times more electricity than it exported across the North-South interconnector.

Fig 4.8 - 10-year time series of net imports of electricity into Ireland across the North-South Interconnector.

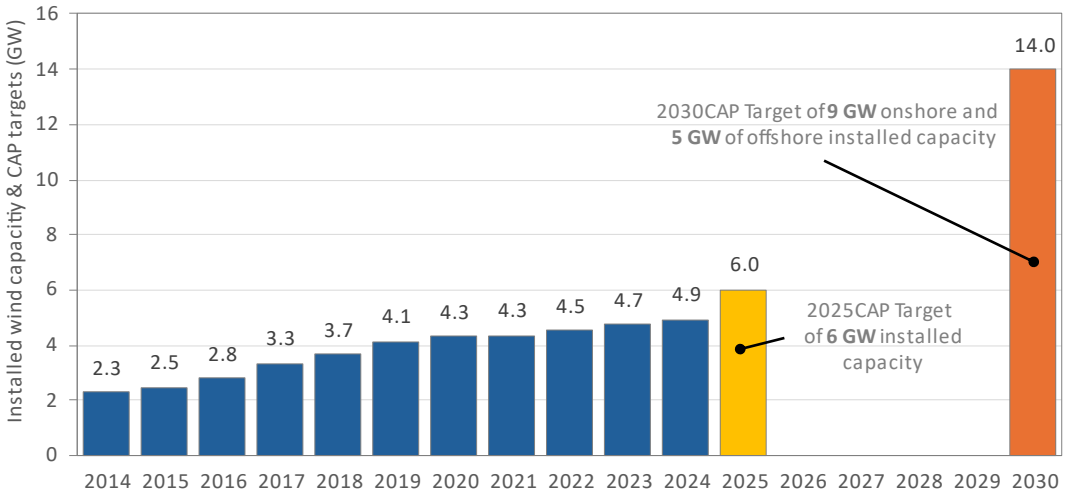


4.3 Wind Generation - Installed Capacity

After adding 0.2 GW of wind capacity in 2024, Ireland's total installed wind capacity at the end of 2024 was 4.9 GW. Ireland has set itself a target of 6 GW of installed wind capacity by the end of 2025 in CAP. To achieve this target, Ireland would need to add 1.1 GW of installed wind capacity in 2025.

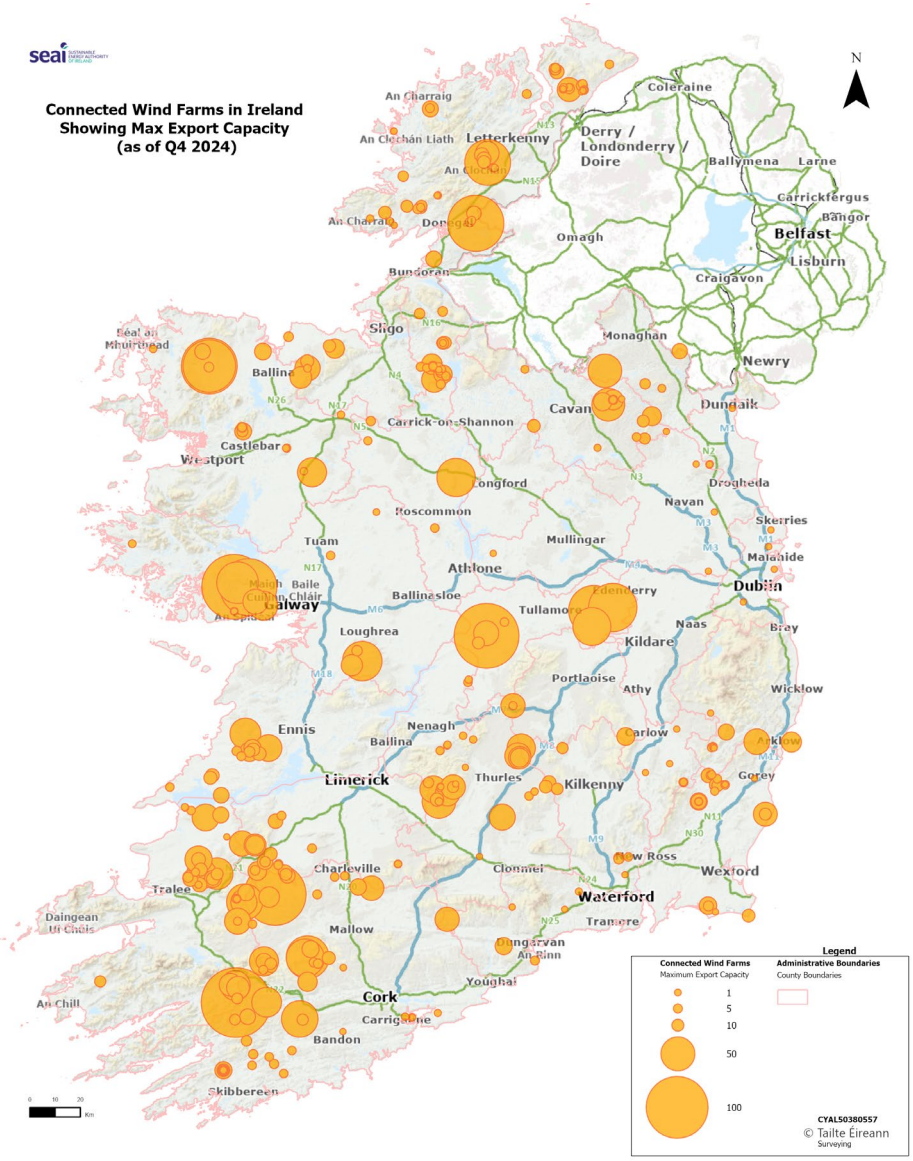
Ireland's total installed wind capacity target for 2030 in CAP is 14 GW, consisting of 9 GW of onshore capacity, and 5GW of offshore capacity. The linear trajectory needed to achieve this target requires adding an average of 1.5 GW of additional capacity every year for the next six years.

Fig 4.9 - 10-year time series of installed wind capacity in Ireland with 2025 and 2030 CAP targets.



The following figure is a 'site map' of the maximum export capacity (MEC) of the grid-connected wind farms providing energy to Ireland, showing the number and relative scale of those wind farms. Grid-connected wind farms have been built, secured a connection to the national grid, and are contracted to sell electricity into the integrated single electricity market (I-SEM) for Ireland.

Fig 4.10 - Map of installed wind farm capacity in Ireland at the end of 2024. The size of the circles scales with the maximum export capacity (MEC) of the wind farms, and the centre of the circles corresponds to the location of the wind farms.



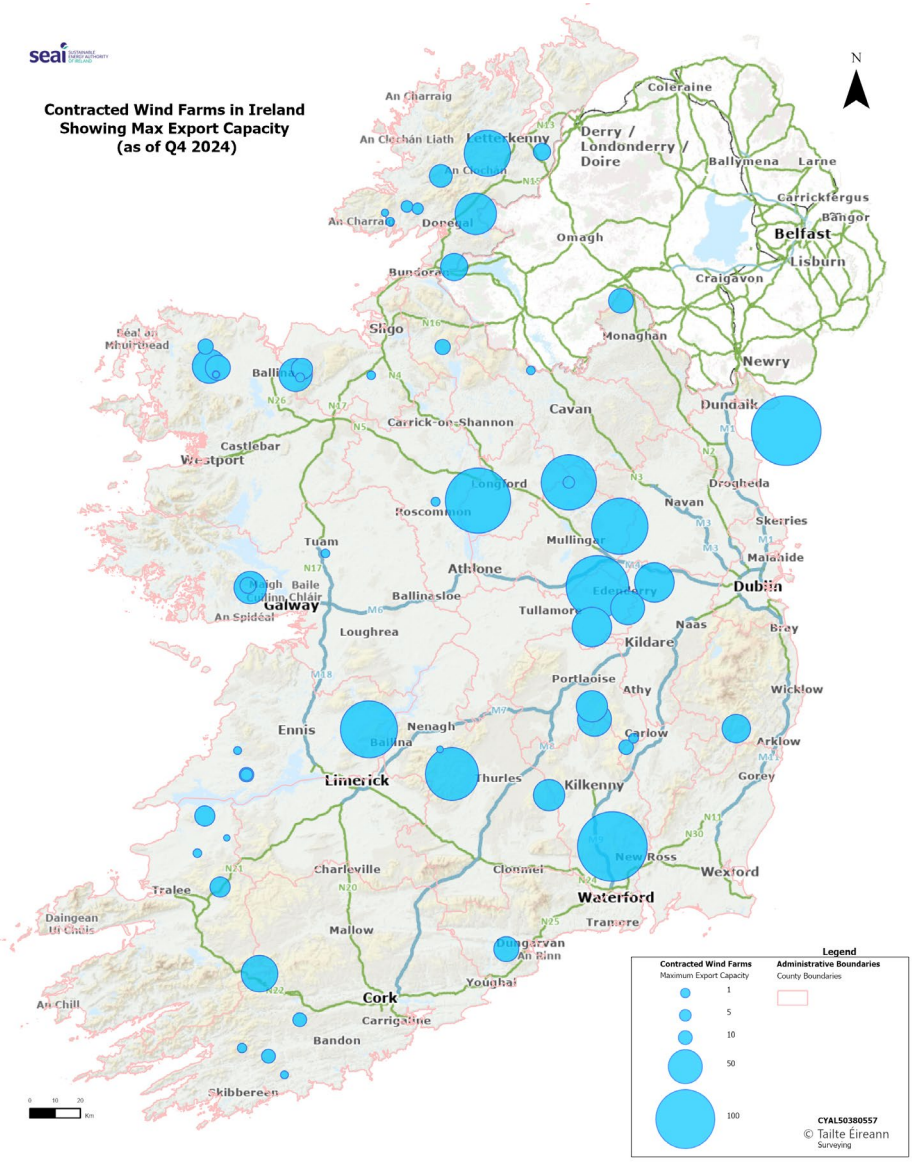
Technical details regarding the site map of the grid-connected wind farms:

- The connected wind farm sites are based on grid-connection offer data from the Transmission System Operator (TSO) or the Distribution Network Operator (DNO), *i.e.* Eirgrid and ESB Networks.
- Wind farm grid coordinates are generally sourced from either Eirgrid or ESB Networks documentation but may also be taken from planning applications.
- Where wind farm grid coordinates are not available to SEAI, the grid coordinates of the relevant substation(s) have been used. Please note that the relevant substation may not be located within the site of the wind farm itself.
- Stand-alone projects, not intended for grid-connection, are not included in the map.

- Not all map entries are discrete wind farms. Some map entries are formal extensions to existing wind farms, and some are formal additions to previously registered capacity, involving no physical addition of infrastructure.

Contracted (but not connected) wind farms are contracted to sell electricity into the I-SEM in the future, but may not yet have been built, or secured planning permission. Not all contracted wind farms will progress to connected wind farms.

Fig 4.11 - Map of planned wind farm capacity in Ireland at the end of 2024. The size of the circles scales with the maximum export capacity (MEC) of the wind farms, and the centre of the circles corresponds to the location of the wind farms.



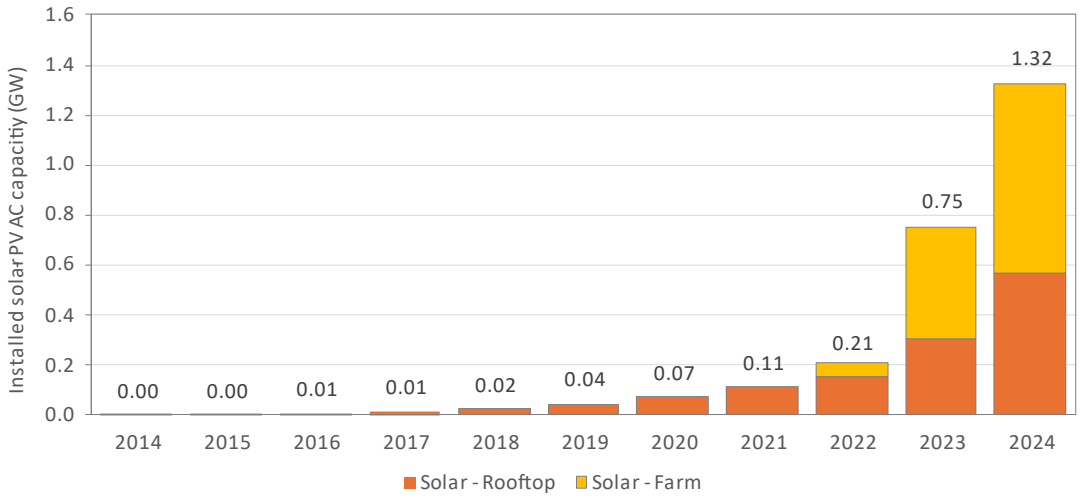
Technical details regarding the site map of the contracted wind farms:

- Contracted wind farm sites are identified based on grid-connection offers from the Transmission System Operator (TSO) or the Distribution Network Operator (DNO).
- Contracted wind farms represent a 'pipeline' of potentially viable projects proposed by developers, but do not reflect the status of planning permission for those projects.
- Not all contracted wind farm sites will translate to connected wind farms.
- Some contracted wind farm sites in the map correspond to future extensions to existing connected wind farms, rather than discrete new wind farms.

4.4 Solar-PV Generation - Installed Capacity

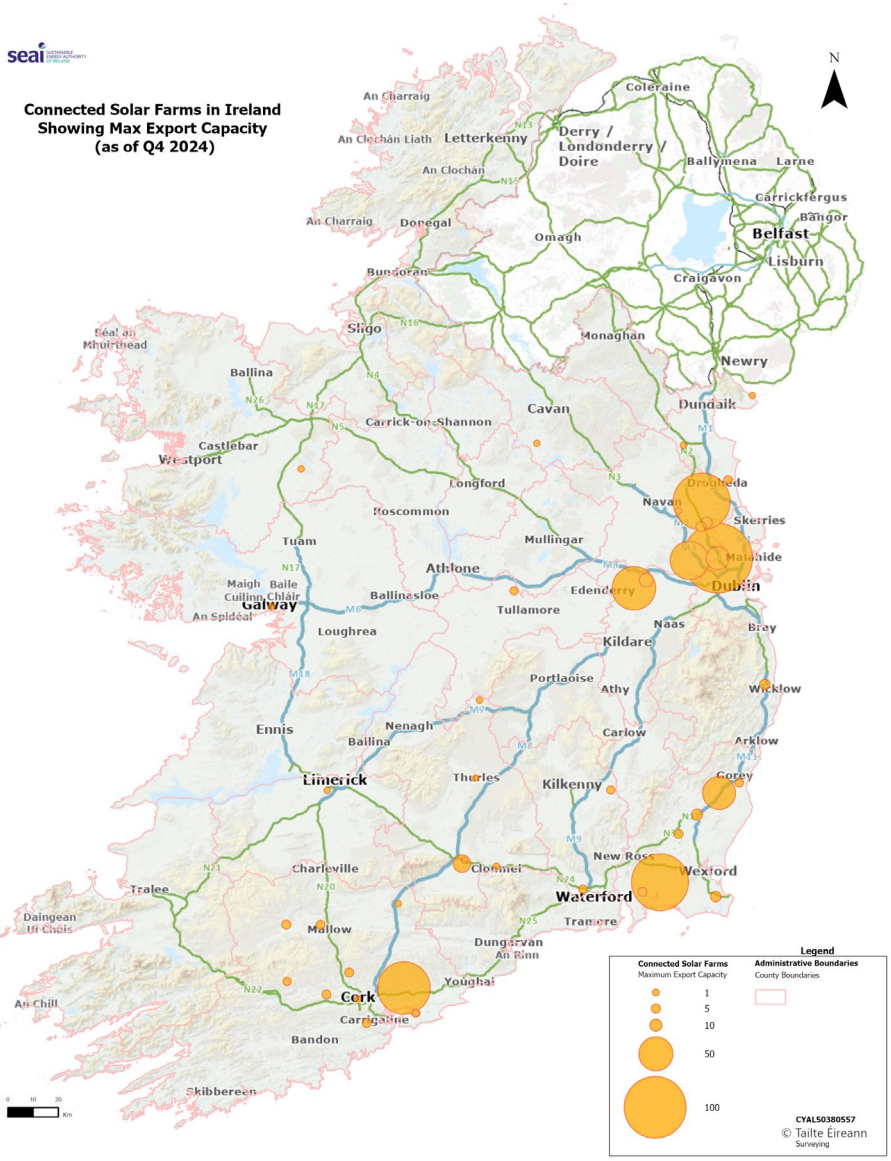
After adding 0.57 GW of capacity during 2024, Ireland's total installed solar-PV capacity (AC) at the end of 2024 was 1.32 GW. Ireland has set itself a target of 8 GW of installed solar-PV capacity by the end of 2030. The linear trajectory needed to achieve this target requires adding an average of 1.1 GW installed capacity every year for the next six years.

Fig 4.12 - 10-year time series of installed solar-PV capacity in Ireland, broken down by 'rooftop' and utility-scale 'solar farms'.



The following figure is a 'site map' of the maximum export capacity (MEC) of the grid-connected utility-scale solar farms providing energy to Ireland, showing the number and relative scale of those solar farms. Grid-connected solar farms have been built, secured a connection to the national grid, and are contracted to sell electricity into the single integrated single electricity market (I-SEM) for Ireland.

Fig 4.13 - Map of installed utility-scale solar-PV capacity in Ireland at the end of 2024. The size of the circles scales with the maximum export capacity (MEC) of the wind farms, and the centre of the circles corresponds to the location of the wind farms.



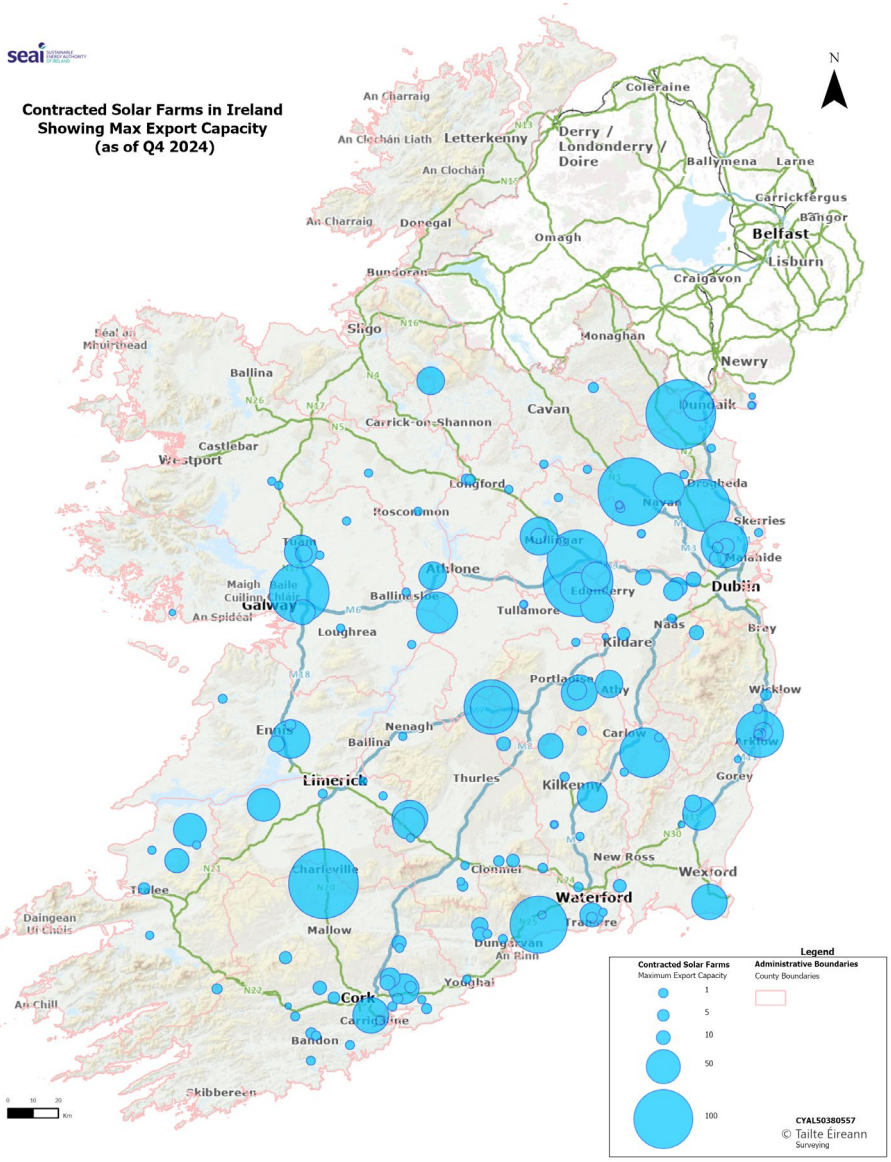
Technical details regarding the site map of the grid-connected solar farms:

- The connected solar farm sites are based on grid-connection offer data from the Transmission System Operator (TSO) or the Distribution Network Operator (DNO), i.e. Eirgrid and ESB Networks.
- Solar farm grid coordinates are generally sourced from either Eirgrid or ESB Networks documentation but may also be taken from planning applications.
- Where solar farm grid coordinates are not available to SEAI, the grid coordinates of the relevant substation(s) have been used. Please note that the relevant substation may not be located within the site of the solar farm itself.
- Stand-alone projects, not intended for grid-connection, are not included in the map.

- Not all map entries are discrete solar farms. Some map entries are formal extensions to existing solar farms, and some are formal additions to previously registered capacity, involving no physical addition of infrastructure.

Contracted (but not connected) solar farms are contracted to sell electricity into the I-SEM in the future, but may not yet have been built, or secured planning permission. Not all contracted solar farms will progress to connected wind farms.

Fig 4.14 - Map of planned utility-scale solar-PV capacity in Ireland in 2024.



Technical details regarding the site map of the contracted solar farms:

- Contracted solar farm sites are identified based on grid-connection offers from the Transmission System Operator (TSO) or the Distribution Network Operator (DNO).
- Contracted solar farms represent a 'pipeline' of potentially viable projects proposed by developers, but do not reflect the status of planning permission for those projects.
- Some contracted solar farm sites in the map correspond to future extensions to existing connected solar farms, rather than discrete new solar farms.

5 Energy Supply Streams & Transformations

5.1 Total Energy Supply Streams

Ireland's total primary energy requirement is satisfied through the sum of positive-inward flows, such as indigenous production, imports, and stock-draws, and negative-outward flows, such as exports, stock-builds, and marine-bunkering.

Ireland imports 100% of its oil and coal requirements but satisfies its requirement for other energy products through a blend of (net) imports and indigenous production, *i.e.* the production or extraction of energy from within Ireland's national boundaries.

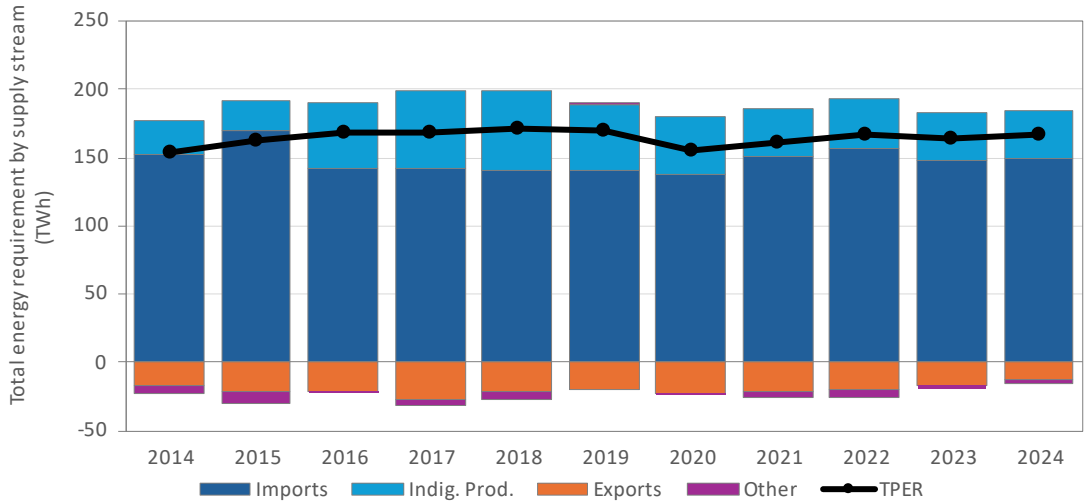
Most of Ireland's indigenous production of energy in 2024 was renewable, while most of Ireland's energy imports were fossil fuels. Most of Ireland's energy exports consist of oil products refined at the Whitegate refinery in County Cork, refined from imported crude oil.

Fig 5.1 - Bubble plot breakdown of Ireland's total energy requirement in 2024 by supply stream (*e.g.* imports, indigenous production, *etc.*) and by energy product.

Ireland's total primary energy requirement was 167.5 TWh in 2024, a 2.3% increase on the previous year.

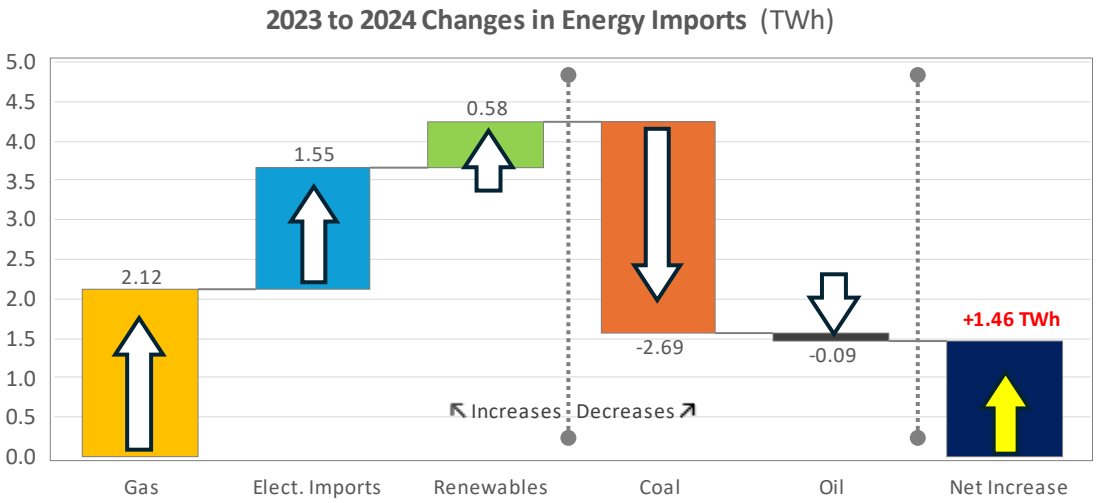
Energy imports in 2024 increased by +1.5 TWh, indigenous production decreased by -0.23 TWh, exports decreased by -3.79 TWh, net stock changes decreased by -1.40 TWh, and fuel supplied to marine bunkers decreased by -0.20 TWh, compared to the previous year.

Fig 5.2 - 10-year time series of Ireland's total energy requirement by supply stream.



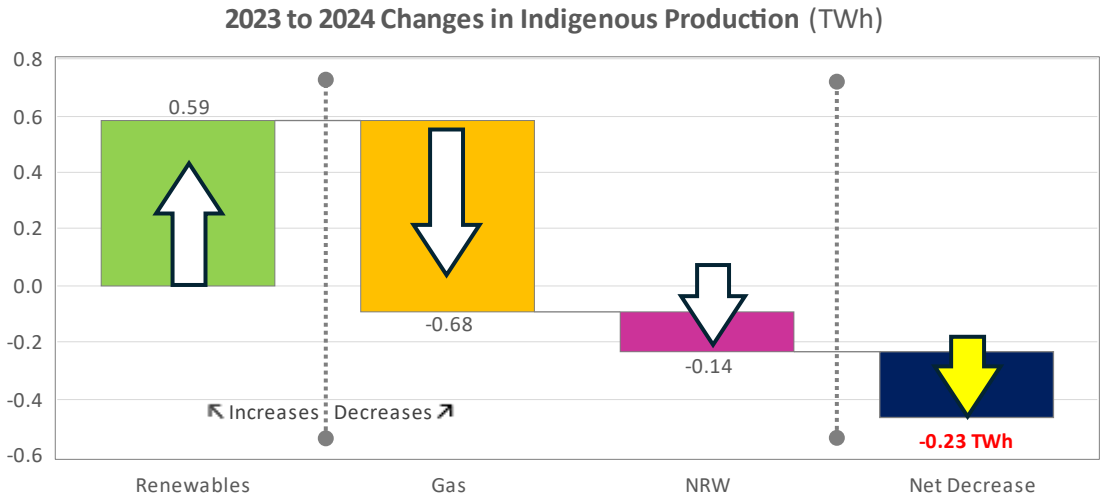
The overall increase in net imports observed in 2024 was driven by underlying increases in imported natural gas (+2.12 TWh), electricity (+1.55 TWh) and renewables (+0.58 TWh), with partially counterbalancing decreases in imported coal (-2.69 TWh) and oil (-0.09 TWh).

Fig 5.3 - 2023 to 2024 changes in imports by energy source.



The overall reduction in indigenous production observed in 2024 was driven by underlying decreases in indigenous natural gas (-0.68 TWh) and non-renewable waste (0.14 TWh), with a partially counterbalancing increases in the indigenous production of energy from renewables (+0.59 TWh).

Fig 5.4 - 2023 to 2024 changes in indigenous production by energy source.



5.2 Supply Streams for Key Oil Products

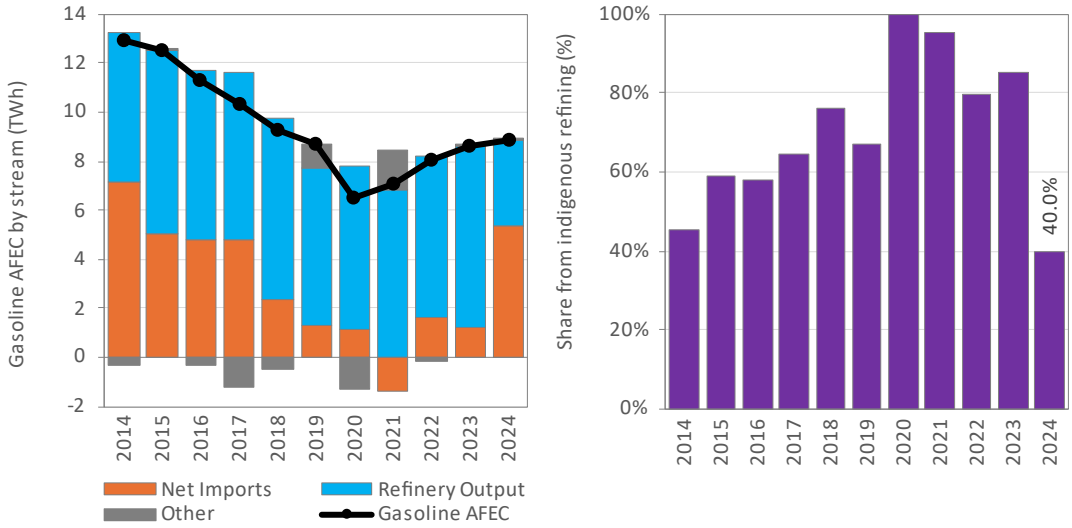
All oil-products to the Irish market are ultimately sourced from international imports. However, the supply of refined oil-products to the Irish market can come through (a combination of) two channels:

- The *direct import* of those oil-products into Ireland
- The refining of oil-products *in Ireland*, from imported crude oil, at the Whitegate refinery in Cork (Ireland's only oil refinery)

The available supply of gasoline to the Irish market is the sum of net-imports of gasoline, refinery output, and 'other' streams (where the 'other' streams consist of stock draws/builds, and its use as refinery feedstock).

For much of the last decade, most gasoline supplied to the Irish market has come from Irish refinery outputs. However, in 2024, the share of Ireland's available supply of gasoline from indigenous transformation and exchange processes reduced to 40.0% (with the remainder coming from imports). This reduction was due to the scheduled temporary cessation of mineral oil refining at Whitegate to allow for the refinery's 5-yearly turnaround maintenance programme.[13]

Fig 5.5 - 10-year time series of gasoline supply streams to the Irish market, and the share from indigenous transformation and exchange processes.

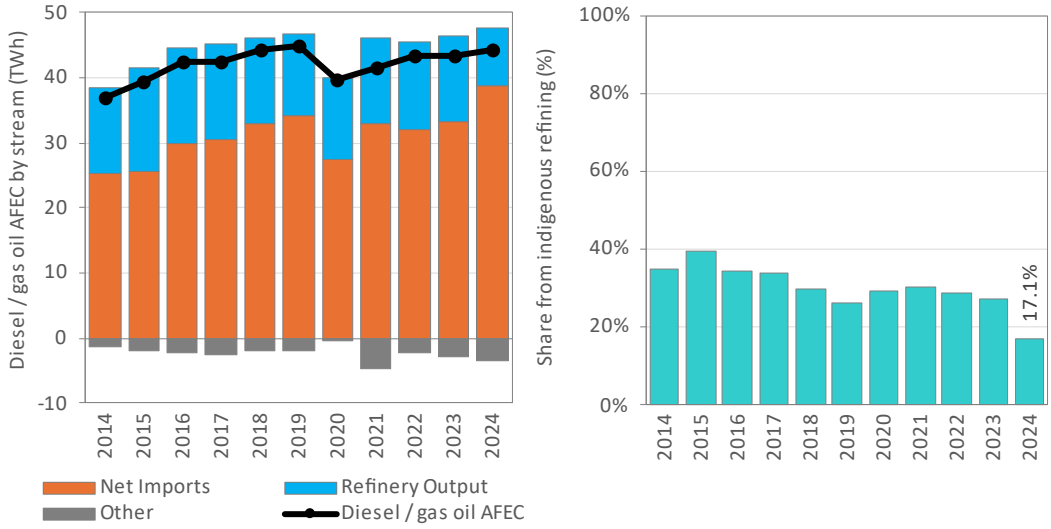


The available supply of diesel and gasoil (i.e. 'marked diesel' or 'green diesel') to the Irish market is the sum of net-imports of diesel and gasoil, refinery output, and 'other' streams (where the 'other' streams consist of stock draws/builds, transfers to international marine bunkers, input to electricity generation, own use at the refinery, and other exchanges and transfers).

Most diesel and gasoil supplied to the Irish market comes from net imports. In 2024, the share of Ireland's available supply of gasoline from indigenous transformation and exchange processes was 17.1%. This is somewhat lower than recent years, because, for part of 2024, the refinery underwent a scheduled temporary cessation of mineral oil refining to allow for the refinery's 5-yearly turnaround maintenance programme.

[13] https://leap.epa.ie/docs/8d2fcc80-76e5-47d8-abac-7e344182dd69.pdf

Fig 5.6 - 10-year time series of diesel and gas oil supply streams to the Irish market, and the share from indigenous transformation and exchange processes.

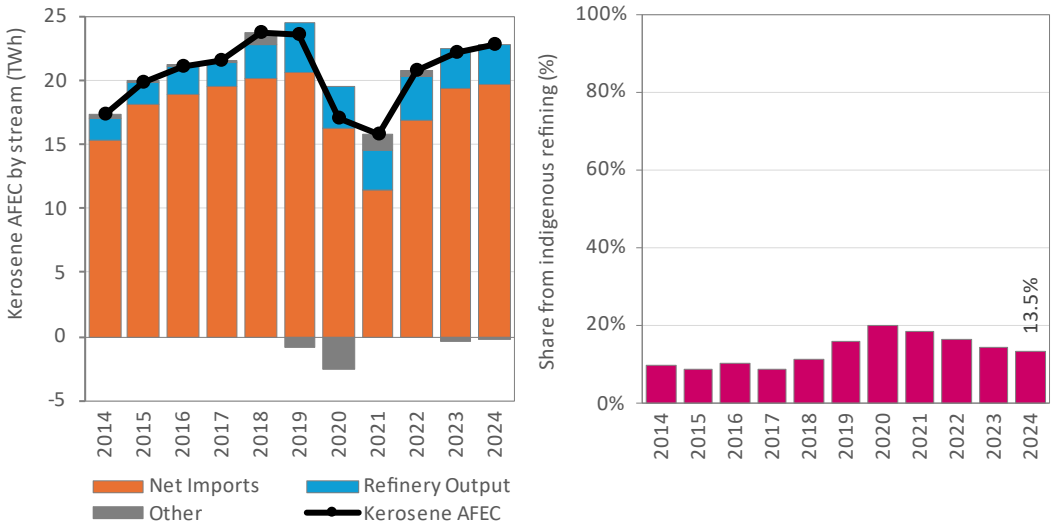


All of Ireland's jet kerosene energy requirement is imported. A proportion of that imported jet kerosene is typically re-classified to heating kerosene, without undergoing a refining process.

The available supply of kerosene to the Irish market is the sum of net-imports of heating and jet kerosene, refinery output of heating kerosene, and 'other' streams (where the 'other' streams consist of stock draws/builds and other exchange and transfers).

Most kerosene supplied to the Irish market comes from net imports. In 2024, the share of Ireland's available supply of heating and jet kerosene from indigenous transformation and exchange processes was 13.5%. Jet kerosene accounted for 56.7% of the total kerosene supply, and heating kerosene accounted for the remaining 43.3%.

Fig 5.7 - 10-year time series of heating and jet kerosene supply streams to the Irish market, and the share from indigenous transformation and exchange processes.



6 Trends in Energy Security of Supply

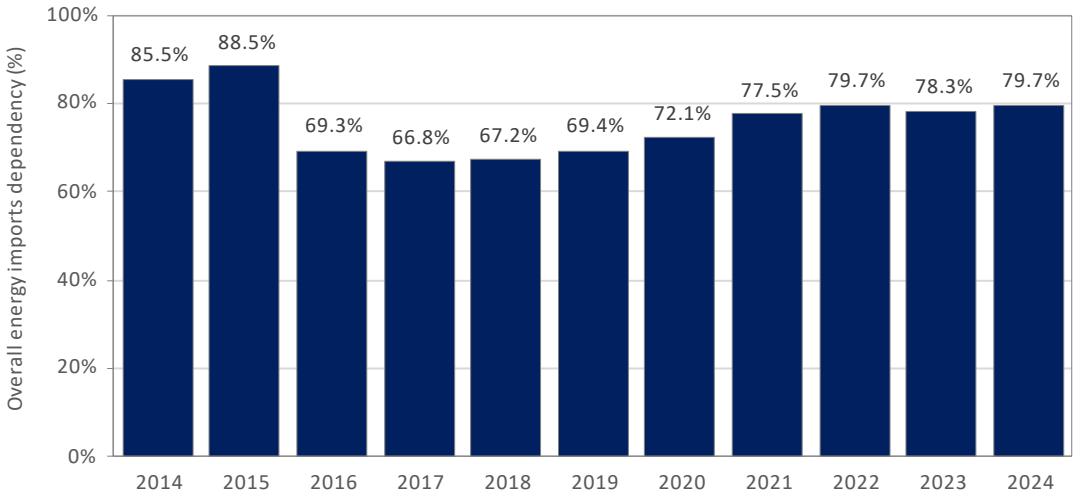
6.1 Energy Imports Dependencies

Energy imports dependency is a common metric used to determine the dependency of a country on international energy imports. It is generally the case that reducing import dependency acts to increase the security of energy supply, because it acts to reduce a country's exposure to international market shocks, unexpected international policy shifts, and delivery disruptions.

Energy import dependency is defined as the ratio of net imports (*i.e.* imports less exports) to primary energy supply (including non-energy sub-products), plus international marine bunkers.

Ireland's overall energy imports dependency in 2024 was 79.7%, up 1.4 percentage points on the value of 78.3% for 2023. By way of comparison, the average EU energy imports dependency in 2023 was 58.3%, the latest year for which a published value from Eurostat is available.

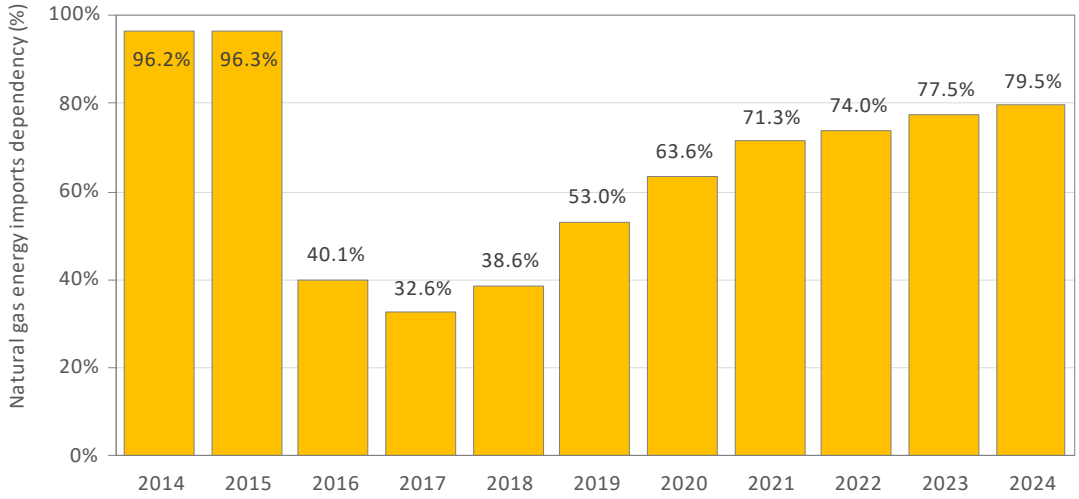
Fig 6.1 - 10-year time series of Ireland's overall energy imports dependency.



Ireland imported more natural gas in 2024 than in 2023. Ireland's natural gas imports dependency in 2024 was 79.5%, up from 77.5% in the previous year.

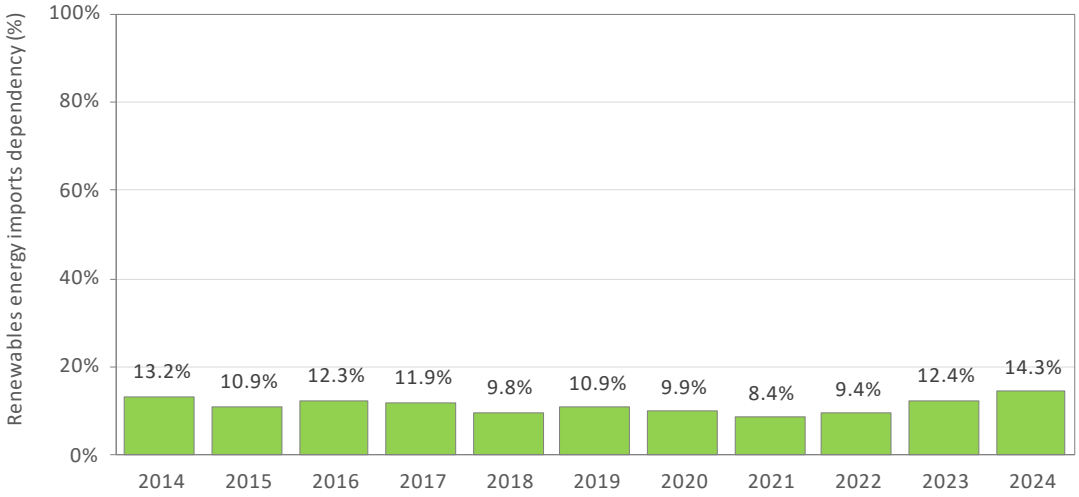
In the figure below, the step-change reduction in gas import dependency in 2016 corresponds to the connection of the Corrib gas-field to the national gas grid. As indigenous production from the Corrib gas-field continues to naturally decrease, the relative proportion of imported gas needed to satisfy Ireland gas requirement will tend to increase.

Fig 6.2 - 10-year time series of Ireland's natural gas energy imports dependency.



Ireland's overall imports dependency on renewable energy remained relatively low in 2024 at 14.3%, due to 100% of Ireland's wind, renewable waste, ambient heat, hydroelectricity, solar photovoltaic (PV) generation, landfill gas, biogas, and solar thermal energy all coming exclusively from indigenous production.

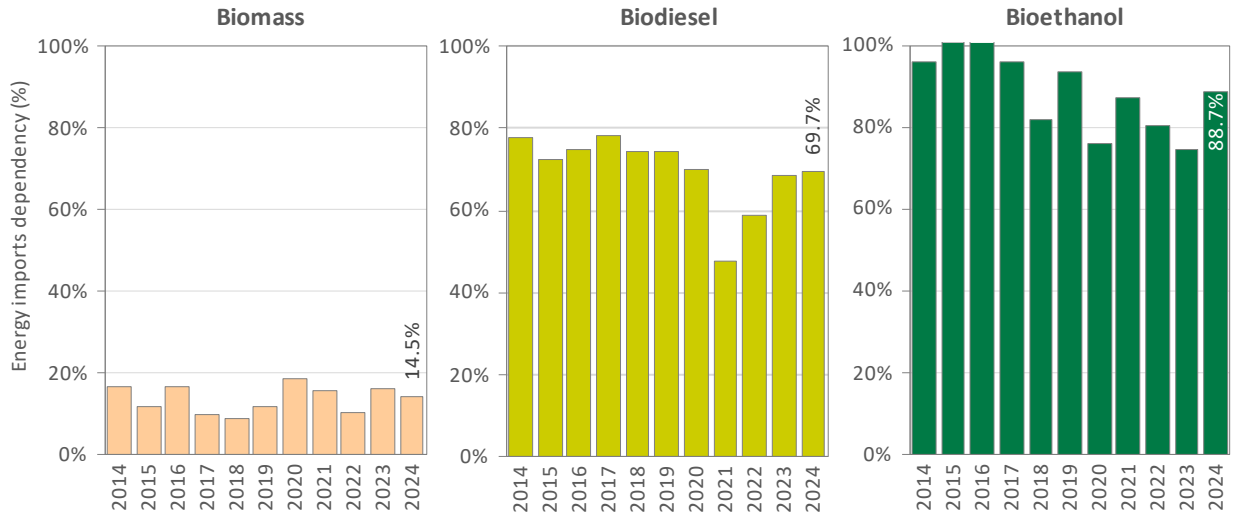
Fig 6.3 - 10-year time series of Ireland's renewables energy imports dependency.



Ireland's energy requirements for biomass, biodiesel and bioethanol are satisfied through a combination of indigenous production[14] and international imports.

In 2024, Ireland's import dependency for biomass was 14.5%, while Ireland's imports dependencies on biodiesels and bioethanol were 69.7% and 88.7%, respectively.

Fig 6.4 - 10-year time series of Ireland's biodiesel, bioethanol and biomass energy imports dependency.

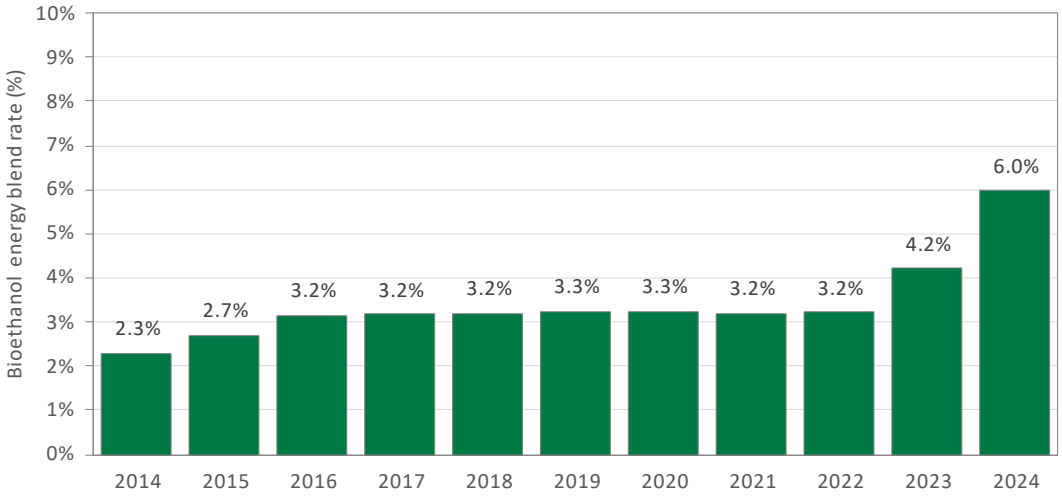


[14] The indigenous production of biodiesel and bioethanol may itself be dependent on the import of biofuel feedstocks.

6.2 Biofuel Blending into Road Diesel and Road Petrol

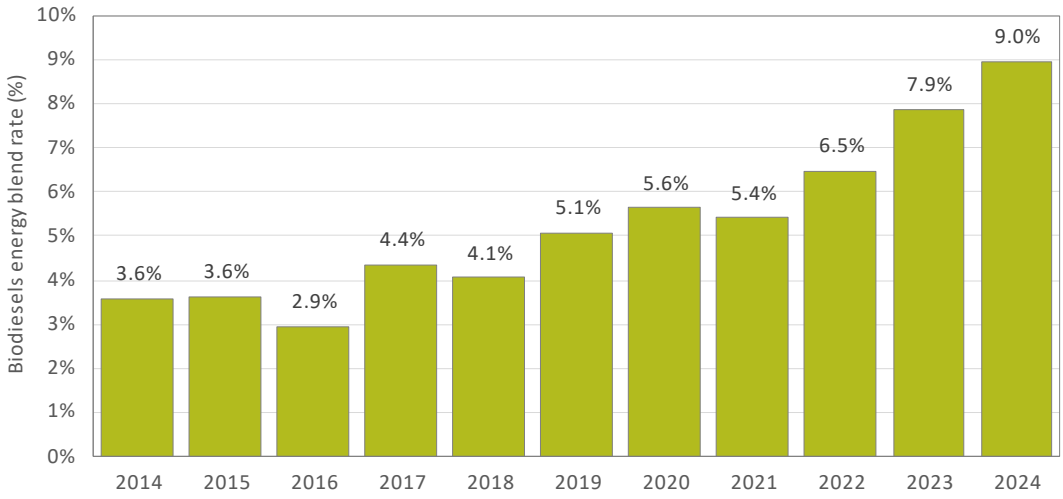
Ireland set new records for biofuel blending into road petrol and road diesel in 2024. The annualised average biofuel blend in road petrol was 6.0% in 2024, up 1.8 percentage points on 2023.

Fig 6.5 - 10-year time series of Ireland's road petrol biofuel blending, in terms of energy content.



The annualised average biofuel-blend in road diesel was 9.0% in 2024, up 1.1 percentage points on 2023.

Fig 6.6 - 10-year time series of Ireland's road diesel biofuel blending, in terms of energy content.

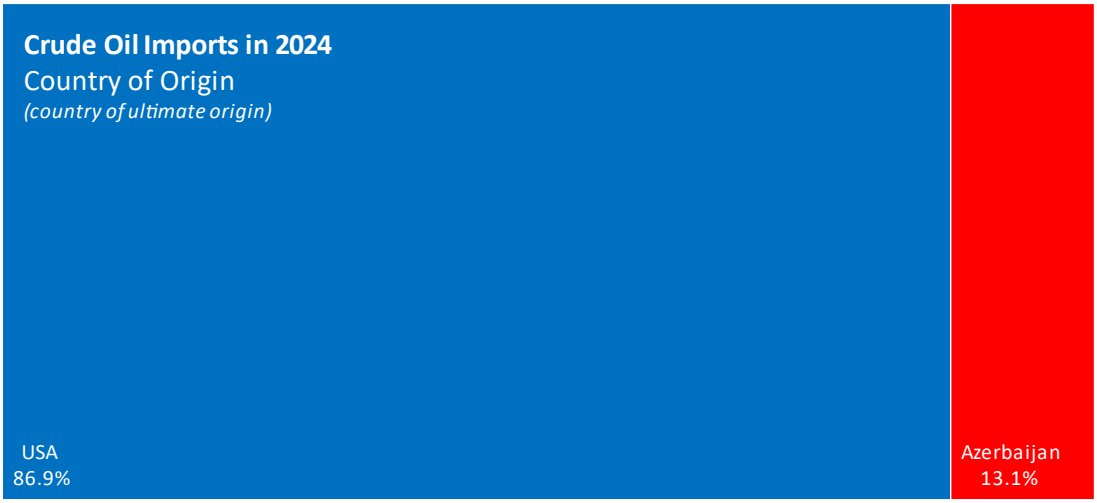


6.3 Imports of Key Oil Products by Partner Country

Under the Energy Statistics Regulation 1099/2008 (ESR), the *'country of import'* for oil products is defined through two channels – (1) the country of ultimate origin for primary oils (*e.g.* crude oil), and (2) the country of *'last consignment'* for secondary oils (*e.g.* finished products such as gasoline). As per the accompanying guidelines to the ESR, the country of ultimate origin is defined as where the crude oil was indigenously produced, whereas the country of last consignment is where the finished products were refined or processed.

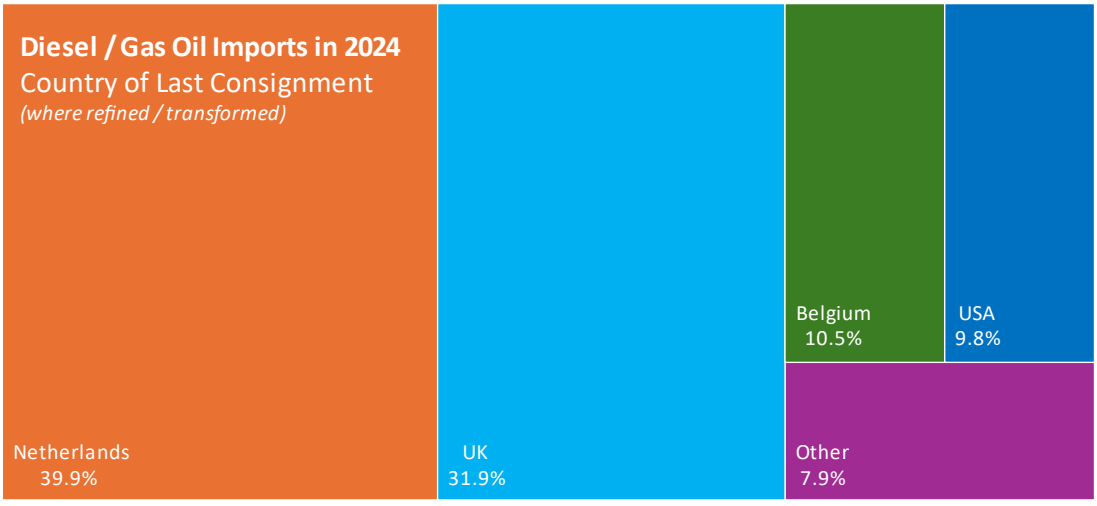
The chemical composition of crude oil depends on its field-of-origin. The variety of crude oil chosen as an input by a particular refinery will depend on how the processes in that refinery are optimised and the spectrum of refined oil-products being targeted. 'Light' crude requires less processing and produces a greater percentage of gasoline and diesel oil-products compared to 'heavy' crude, and 'sweet' crude contains less sulphur than 'sour' crude. In 2024, 86.9% of crude oil imported into Ireland came from the USA, followed by 13.1% from Azerbaijan.

Fig 6.7 - Percentage breakdown of 2024 crude oil imports by country of origin.



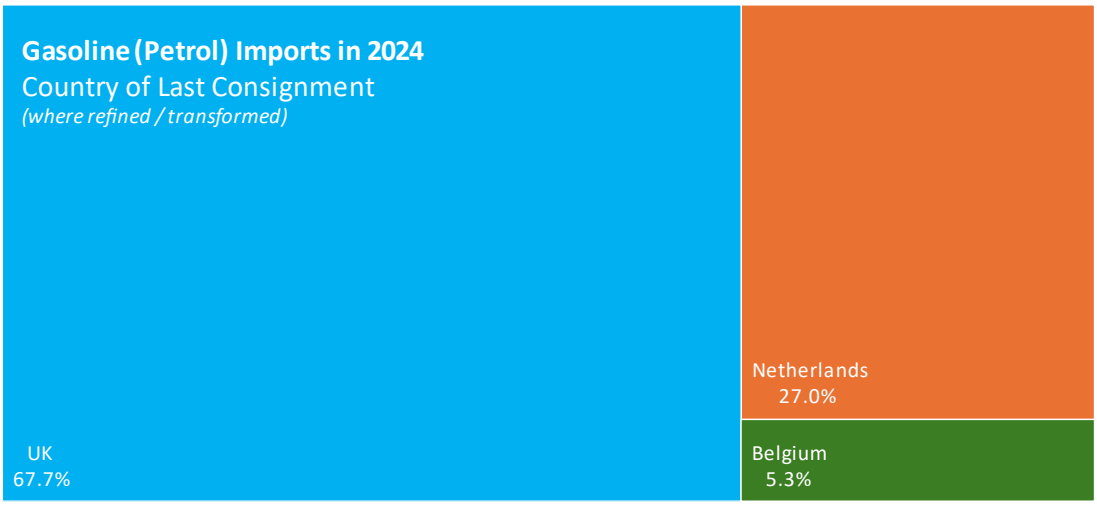
In 2024, 39.9% of the diesel and gasoil imported into Ireland came from the Netherlands, 31.9% came from the UK, 10.5% came from Belgium, 9.8% came from the USA and smaller energy quantities totalling a 7.9% share came from other countries such as Germany, Canada, Sweden, the United Arab Emirates and France.

Fig 6.8 - Percentage breakdown of 2024 diesel and gas oil imports by country of last consignment.



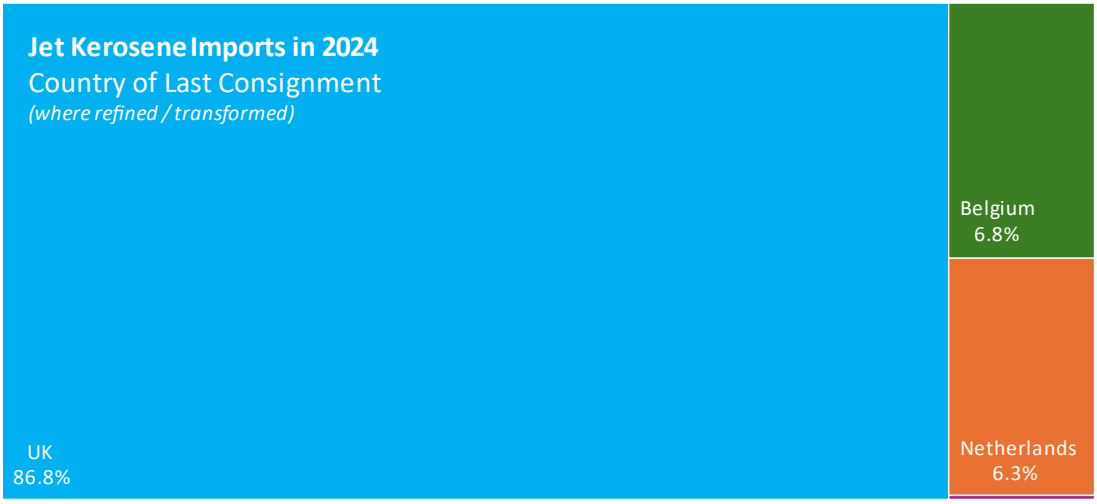
In 2024, 67.7% of the gasoline imported into Ireland came from the UK, followed by 27.0% from the Netherlands, and 5.3% from Belgium.

Fig 6.9 - Percentage breakdown of 2024 gasoline imports by country of last consignment.



In 2024, 86.8% of the jet kerosene imported into Ireland came from the UK, followed by 6.8% from Belgium, 6.3% from the Netherlands and 0.1% from other countries.

Fig 6.10 - Percentage breakdown of 2024 jet kerosene imports by country of last consignment.



In 2024, 84.9% of the jet kerosene imported into Ireland came from the UK, followed by 10.2% from the Netherlands and 5.0% from Belgium.

Fig 6.11 - Percentage breakdown of 2024 heating kerosene imports by country of last consignment.

6.4 National Emergency Oil Stocks

Ireland maintains emergency and commercial oil stocks in line with European and international obligations, specifically, EU Directive 2009/119/EC, and the IEA Agreement on an International Energy Programme.

The EU Directive obliges member states to maintain minimum oil stocks corresponding to at least 90 days of average daily net imports or 61 days of average daily inland consumption, whichever is greater. For Ireland, this equates to 90 days of net oil imports, which aligns with EU legislation and the IEA requirement on members to hold at least 90 days equivalent.

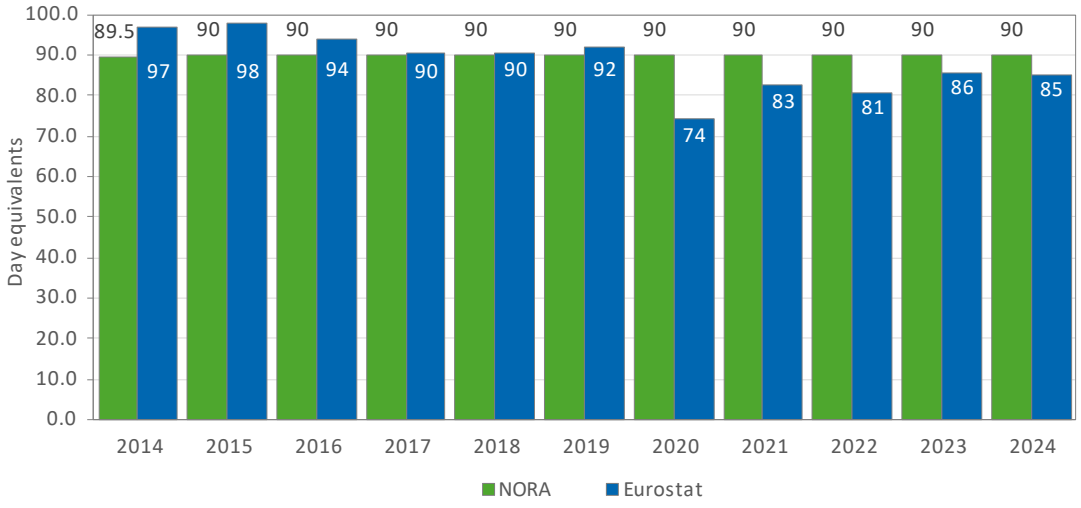
Ireland's oil stock obligation is administered by the *National Oil Reserve Agency* (NORA). Stocks administered by NORA can be stored in Ireland and other countries, under bi-lateral oil stockholding agreements, as physical stocks, or as 'stock tickets', which are short-term commercial contracts that include an option to purchase oil under emergency circumstances.

Ireland holds oil stock and tickets in Ireland, in EU member states, and in Northern Ireland (which is outside the EU for the purpose of the EU energy statistics regulation's reporting, since Brexit came into force in February 2020).

The quantity of oil stocks is often expressed in terms of days equivalent, which compares the *current* oil stock levels to *historic* oil demand in the previous reporting period, *i.e.* approximately one year earlier.

In 2024, monthly assessments showed that Ireland maintained EU-based oil stocks of between 84- and 86-days equivalent of demand. The average days equivalent of EU-based oil stocks in 2024 across all 12-month assessments was 85 days. It is important to note that NORA maintains additional oil stocks in Northern Ireland [15] to meet the 90-day requirement that are not captured in these EU-based stock statistics.

Fig 6.12 - Annualised average of monthly assessments of Irish emergency oil stocks in days equivalent of demand.



[15] https://www.nora.ie/_files/ugd/b984d0_d5d61e9808e842eeb16e7c5b2ea62880.pdf

Acknowledgements

SEAI gratefully acknowledges the co-operation and responses from the many different organisations, agencies, energy suppliers and distributors surveyed by SEAI each year. Accurate and timely responses to SEAI's surveys provide key input to robust and inclusive national energy statistics that can inform evidence-based discussions, debate, and policy.

Appendices

Appendix 1. Trends in Ireland's total primary energy requirement (TPER)

Total primary energy requirement (TPER) excludes non-energy sub-products (bitumen, lubricants and white spirits) and is calculated as the sum of five streams from the supply block in Ireland's National Energy Balance:

- National production (+)
- Imports (+)
- Exports (-)
- Marine bunkers (-)
- Stock change (+ or -)

Ireland's TPER is a measurement of the total energy quantity needed to facilitate own use of energy by the energy sector, transformation and distribution of energy and their associated losses, as well as final energy consumption by the end user in a given year.

Primary energy requirement data has been informed by survey responses received from organisations, including energy producers, import/export companies, network operators and energy supply companies. It also includes multiple public administration datasets including EU-ETS data provided by the EPA to SEAI and data from the Revenue Commissioners, the Environmental Protection Agency (EPA), the Oil Levy Assessment (OLA) and the Sustainable Energy Authority of Ireland (SEAI).

Data is collected in a range of physical and energy units based on the energy sub-product type (*e.g.* kilotonnes, kilolitres, terajoules, million cubic meters, gigawatt hours) and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) by SEAI using conversion factors on a net calorific value basis.

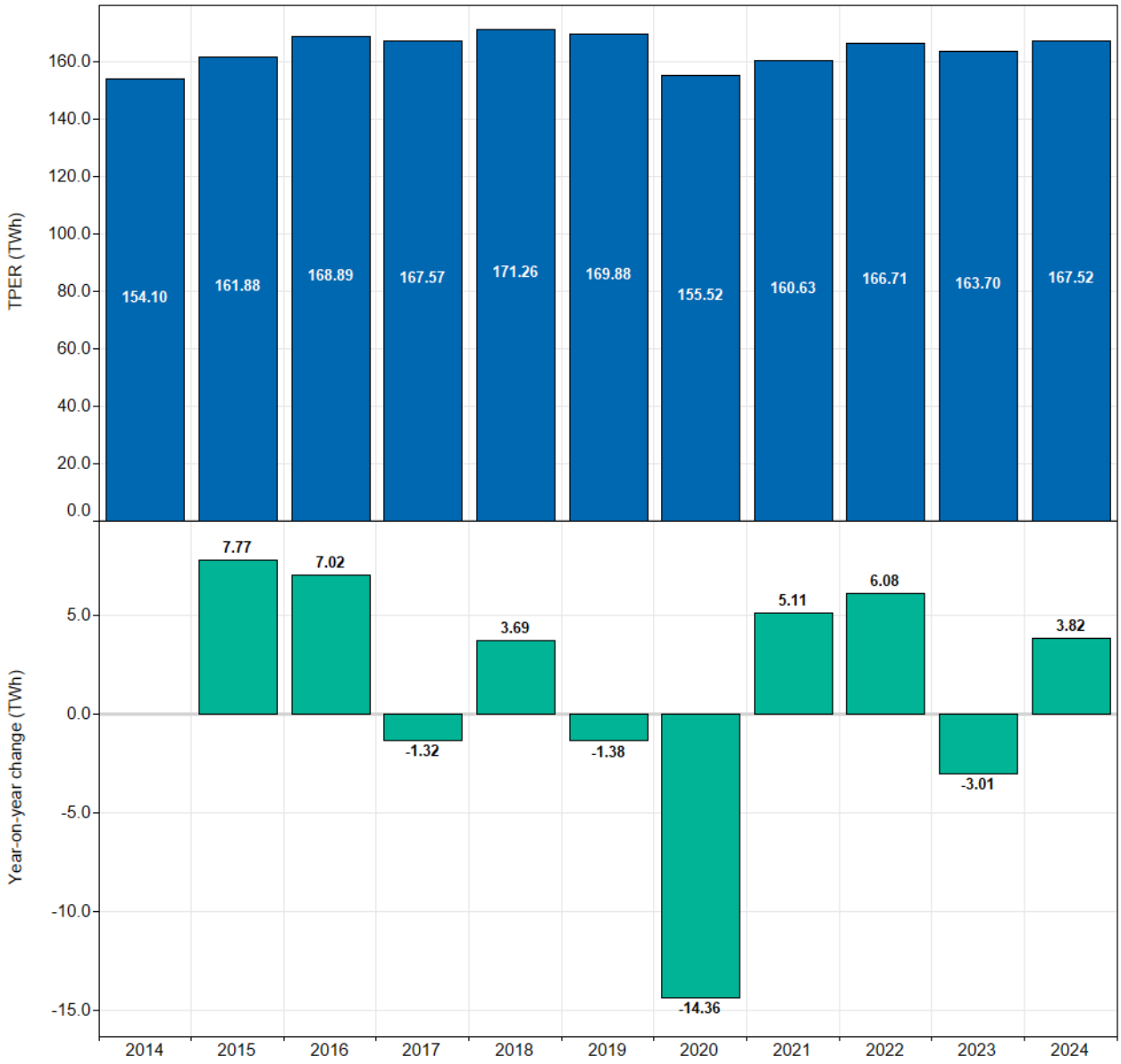
Electricity generation from non-combustible renewable sources (*e.g.* wind, hydro, solar PV) have been set at 100% efficient as electricity production is the first point of measurement for these renewable sub-types.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.1.1 Total primary energy requirement and annual change

Figure A.1.1 (top) shows Ireland's annual TPER (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*) for the last 11-years.

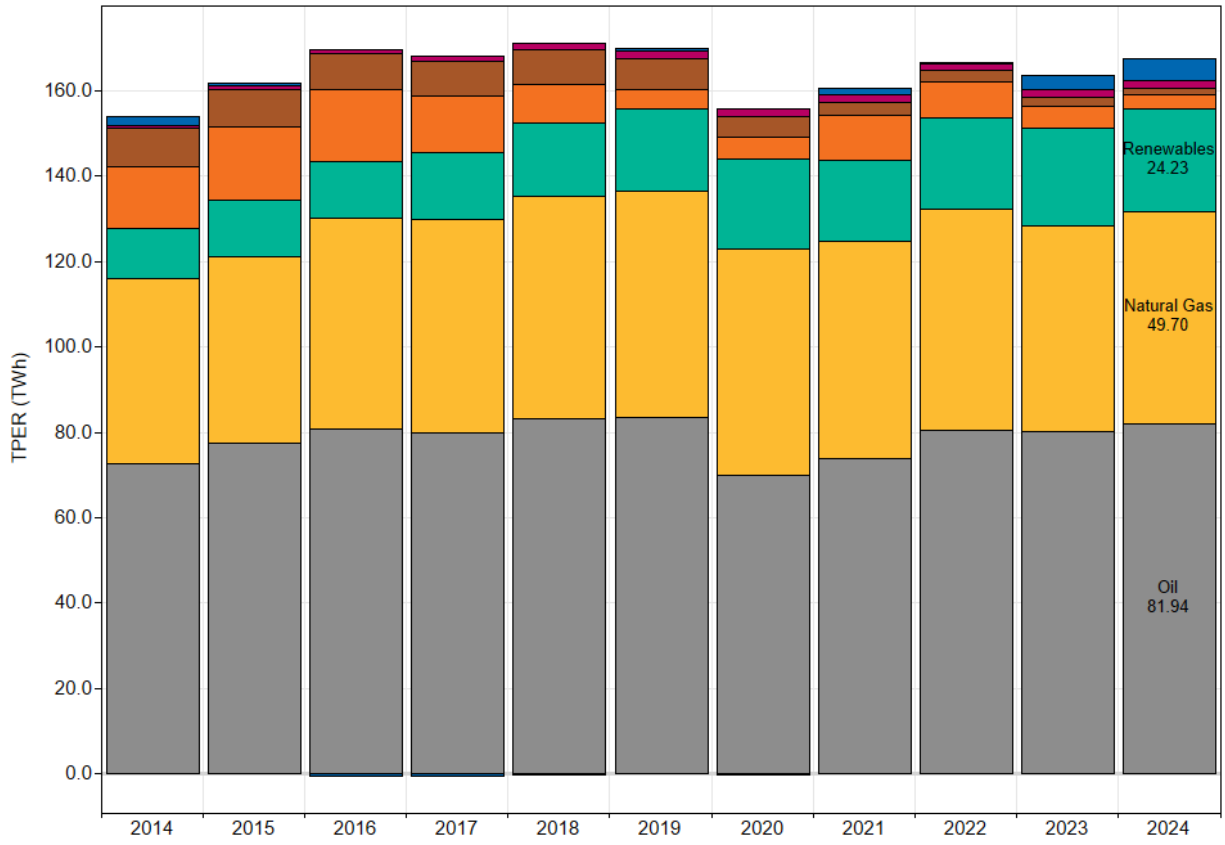
Figure A.1.1 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual TPER, *i.e.* the value in 2024 is the difference between the TPER in 2024 *vs.* 2023.



A.1.2 Total primary energy requirement by energy product

Figure A.1.2 shows the annual TPER with an energy product breakdown (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*). Here, the energy product termed 'Electricity' refers specifically to the net import of electricity across international interconnectors.

The energy product marked as 'NRW' stands for *Non-Renewable Wastes*.



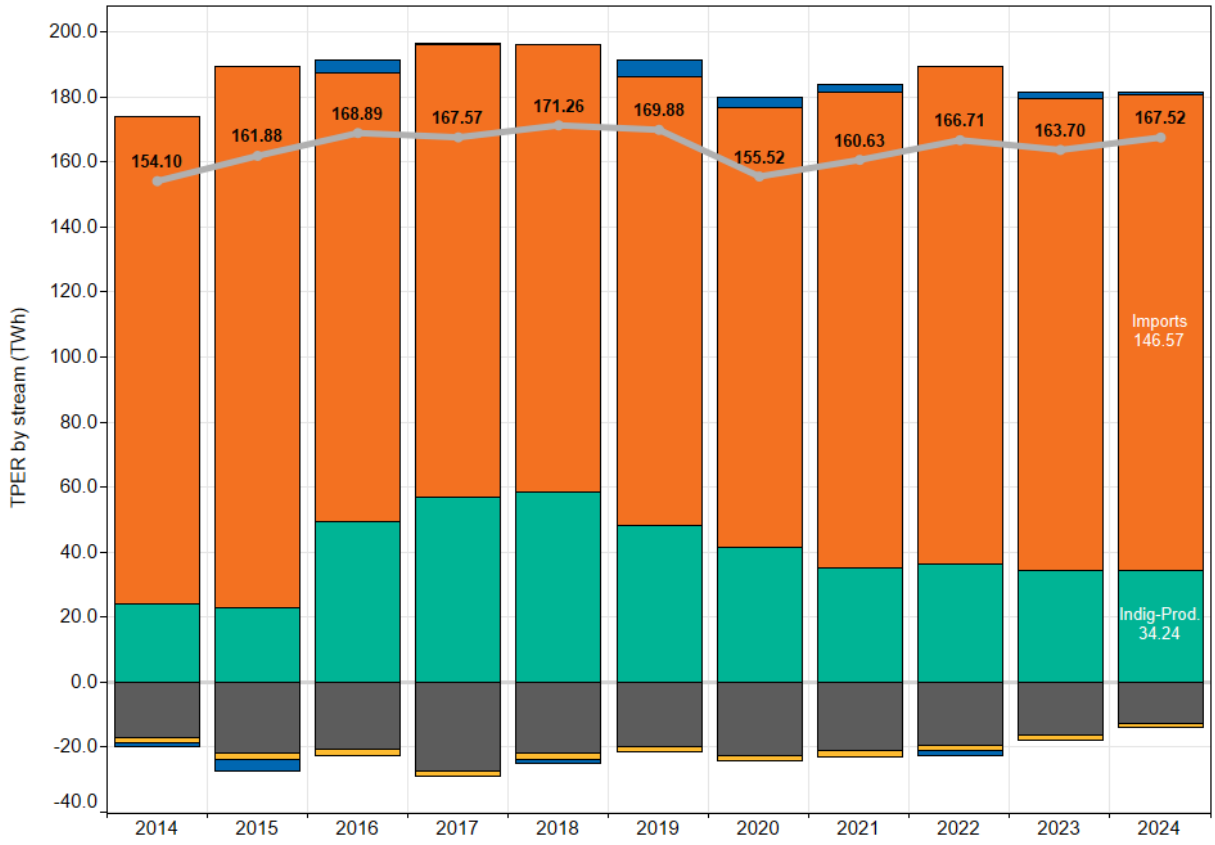
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Oil	72.56	77.38	80.78	79.79	83.19	83.48	69.77	73.71	80.36	80.06	81.94
Natural Gas	43.40	43.83	49.44	50.19	52.11	53.16	53.22	50.98	52.00	48.26	49.70
Renewables	11.68	13.23	13.21	15.54	17.17	19.08	20.91	18.98	21.33	22.95	24.23
Coal	14.52	17.05	16.86	13.33	9.16	4.50	5.21	10.62	8.45	5.09	3.29
Peat	9.03	8.92	8.54	8.08	7.98	7.32	4.86	3.08	2.59	2.10	1.49
NRW	0.77	0.80	0.78	1.32	1.69	1.69	1.71	1.66	1.73	1.96	1.82
Electricity	2.15	0.67	-0.71	-0.68	-0.03	0.64	-0.15	1.59	0.25	3.28	5.06
TPER (TWh)	**154.10**	**161.88**	**168.89**	**167.57**	**171.26**	**169.88**	**155.52**	**160.63**	**166.71**	**163.70**	**167.52**

A.1.3 Total primary energy requirement by stream

Figure A.1.3 shows the annual TPER broken out by stream (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*). The bars show the absolute energy quantity delivered or removed from Ireland's TPER by each stream and the line shows the net TPER, calculated as a sum of the individual streams.

National production, energy imports and net stock draw add to the TPER. Energy exports, marine bunkers and net stock build reduce the value of the TPER.

The streams marked as' Indig-Prod.', 'Mar-Bunk.', and 'Stk Change' stand for *indigenous production*, *transfers to international marine bunkers*, and *stock changes*, respectively.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Imports	150.05	166.50	138.20	139.54	137.42	137.94	135.14	146.13	153.13	145.11	146.57
Indig-Prod.	23.89	22.83	49.35	56.81	58.63	48.27	41.43	35.14	36.22	34.47	34.24
Exports	-17.24	-21.86	-20.73	-27.28	-21.82	-19.81	-22.41	-21.00	-19.59	-16.34	-12.55
Mar-Bunk.	-1.58	-1.86	-1.86	-1.81	-2.01	-1.65	-1.80	-2.01	-1.53	-1.55	-1.35
Stk Change	-1.02	-3.74	3.93	0.31	-0.96	5.14	3.17	2.38	-1.53	2.01	0.61
TPER (TWh)	**154.10**	**161.88**	**168.89**	**167.57**	**171.26**	**169.88**	**155.52**	**160.63**	**166.71**	**163.70**	**167.52**

Appendix 2. Indigenous energy production

Indigenous production of energy corresponds to energy supplied to Ireland from within Ireland's own national boundaries. It is generally accepted that energy produced nationally is considered more secure than imported energy, because it is less susceptible to unexpected international market or policy changes.

Indigenous energy production data has been informed by survey responses received from organisations, including energy producers and network operators. It is also includes data from multiple public administration datasets including the Environmental Protection Agency (EPA) and the Sustainable Energy Authority of Ireland (SEAI).

Data is collected in a range of physical and energy units based on the energy sub-product type (*e.g.* kilotonnes, kilolitres, terajoules, million cubic meters, gigawatt hours) and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) by SEAI using conversion factors on a net calorific value basis.

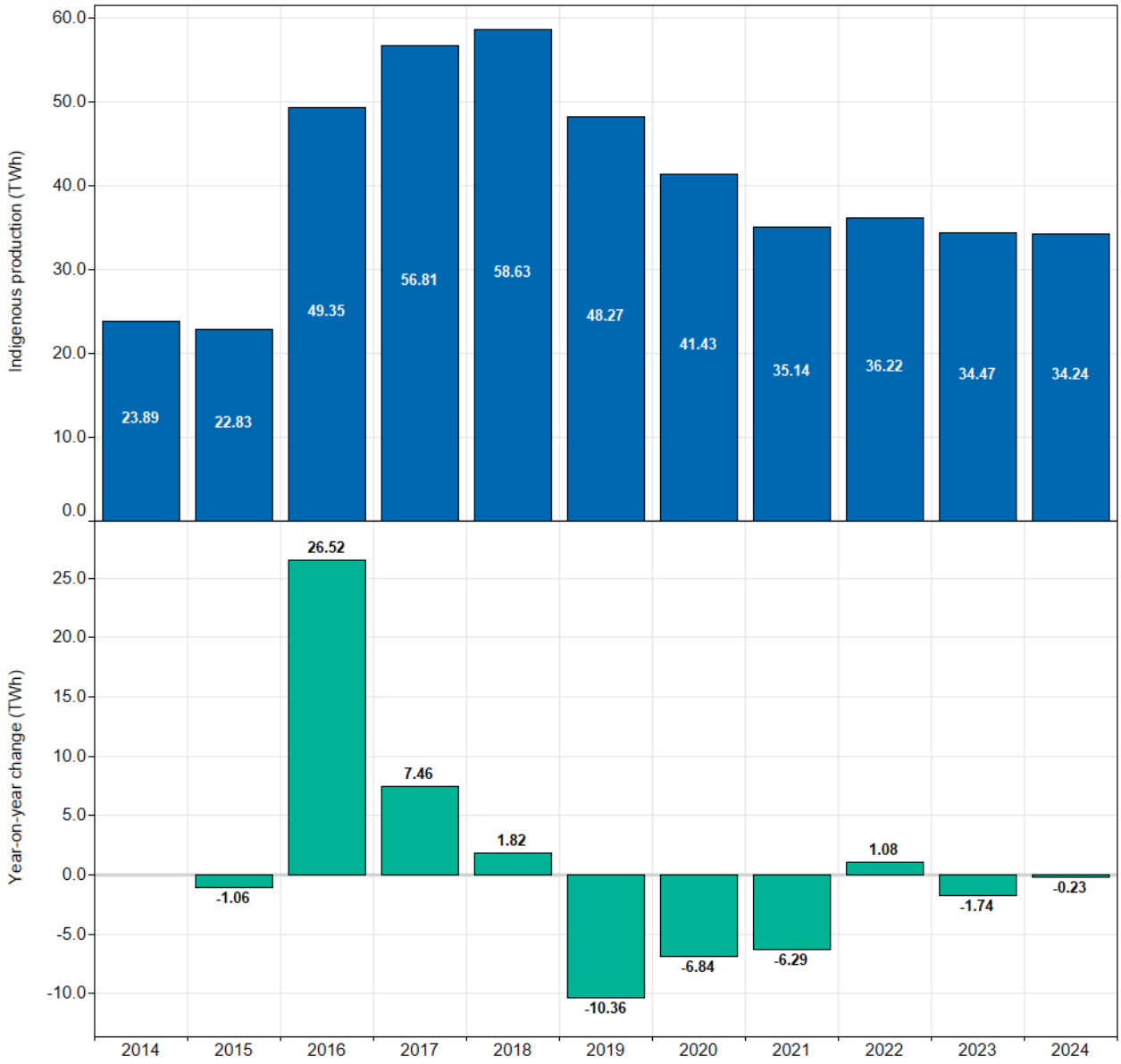
Electricity generation from non-combustible renewable sources (*e.g.* wind, hydro, solar PV) have been set at 100% efficient as electricity production is the first point of measurement for these renewable sub-types.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.2.1 Total indigenous energy production and annual change

Figure A.2.1 (top) shows Ireland's annual total indigenous energy production for the last 11-years

Figure A.2.1 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual total indigenous energy production, *i.e.* the value in 2024 is the difference between the total indigenous energy production in 2024 *vs.* 2023.

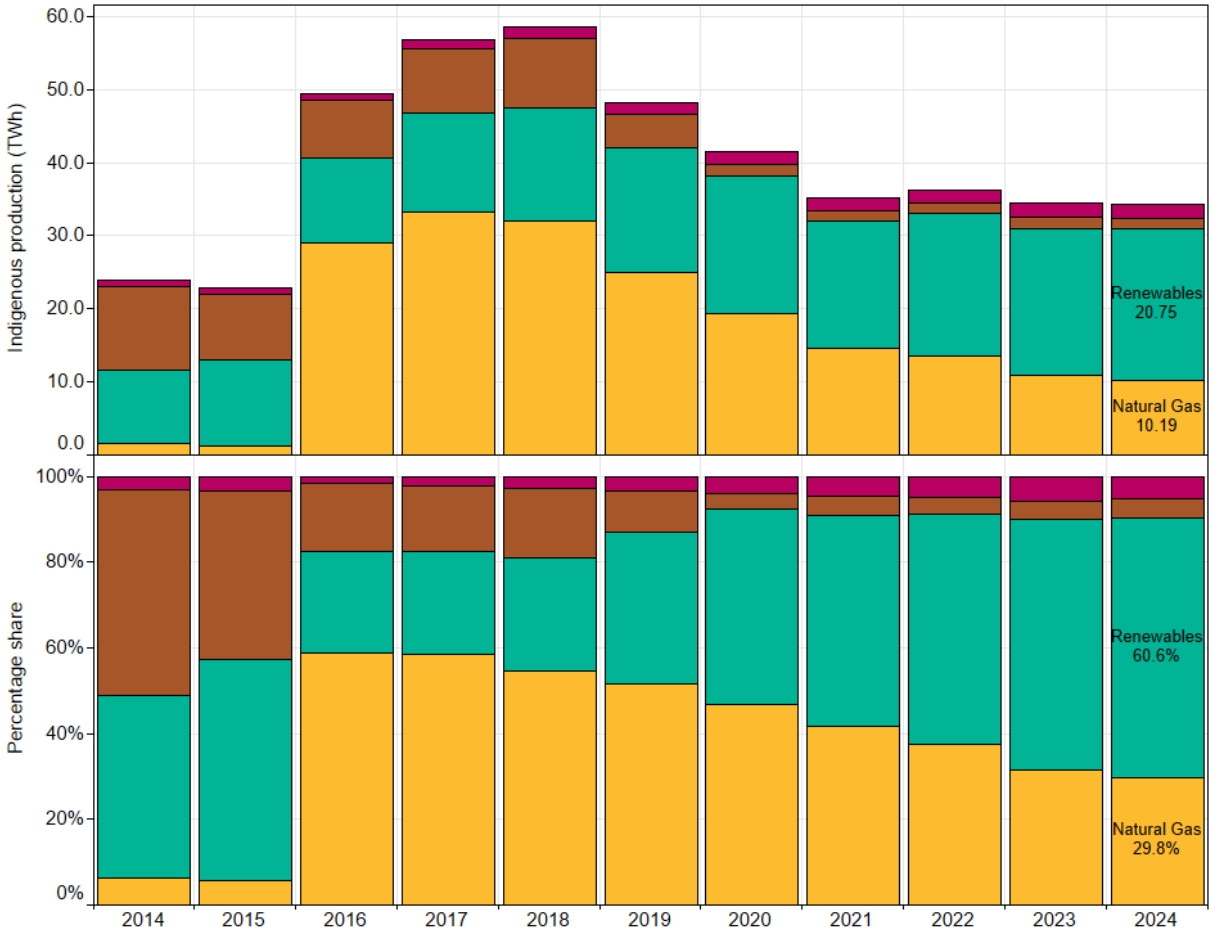


A.2.2 Total indigenous energy production by energy product

Figure A.2.2 (top) shows Ireland's indigenous energy production with an energy product breakdown.

Figure A.2.2 (bottom) shows the energy product breakdown displayed as a percentage of the total indigenous production.

The energy product marked as 'NRW' stands for *Non-Renewable Wastes*.

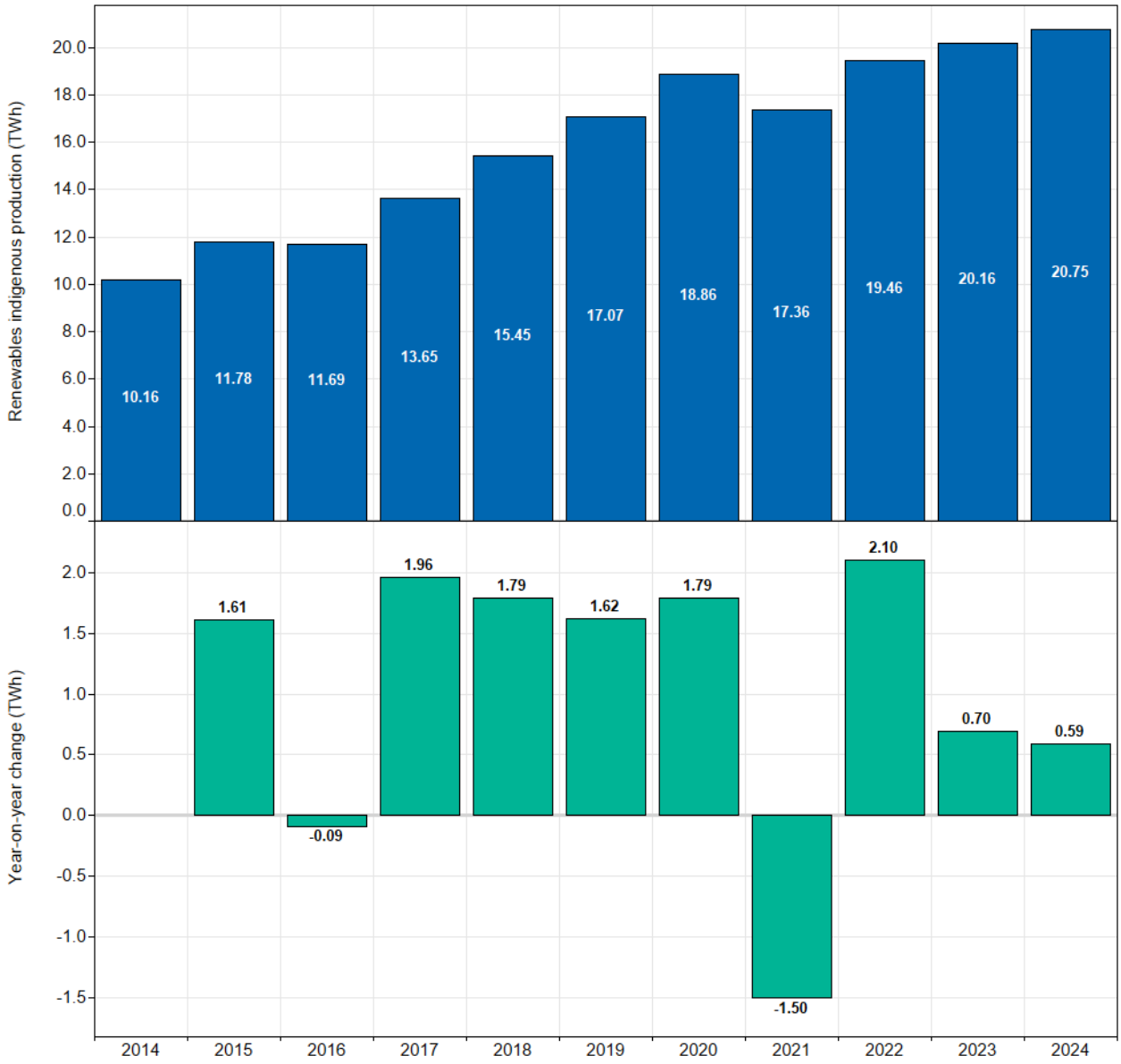


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Natural Gas	1.53 (6.4%)	1.31 (5.7%)	28.99 (58.7%)	33.19 (58.4%)	32.00 (54.6%)	24.97 (51.7%)	19.38 (46.8%)	14.63 (41.6%)	13.55 (37.4%)	10.87 (31.5%)	10.19 (29.8%)
Renewables	10.16 (42.6%)	11.78 (51.6%)	11.69 (23.7%)	13.65 (24.0%)	15.45 (26.3%)	17.07 (35.4%)	18.86 (45.5%)	17.36 (49.4%)	19.46 (53.7%)	20.16 (58.5%)	20.75 (60.6%)
Peat	11.42 (47.8%)	8.95 (39.2%)	7.90 (16.0%)	8.65 (15.2%)	9.49 (16.2%)	4.54 (9.4%)	1.49 (3.6%)	1.49 (4.2%)	1.49 (4.1%)	1.49 (4.3%)	1.49 (4.3%)
NRW	0.77 (3.2%)	0.80 (3.5%)	0.78 (1.6%)	1.32 (2.3%)	1.69 (2.9%)	1.69 (3.5%)	1.71 (4.1%)	1.66 (4.7%)	1.73 (4.8%)	1.96 (5.7%)	1.82 (5.3%)
Indig-Prod. (TWh, %)	**23.89 (100.0%)**	**22.83 (100.0%)**	**49.35 (100.0%)**	**56.81 (100.0%)**	**58.63 (100.0%)**	**48.27 (100.0%)**	**41.43 (100.0%)**	**35.14 (100.0%)**	**36.22 (100.0%)**	**34.47 (100.0%)**	**34.24 (100.0%)**

A.2.3 Renewables indigenous energy production and annual change

Figure A.2.3 (top) shows Ireland's annual renewables indigenous energy production for the last 11-years.

Figure A.2.3 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual renewables indigenous energy production, *i.e.* the value in 2024 is the difference between the renewables indigenous energy production in 2024 *vs.* 2023.

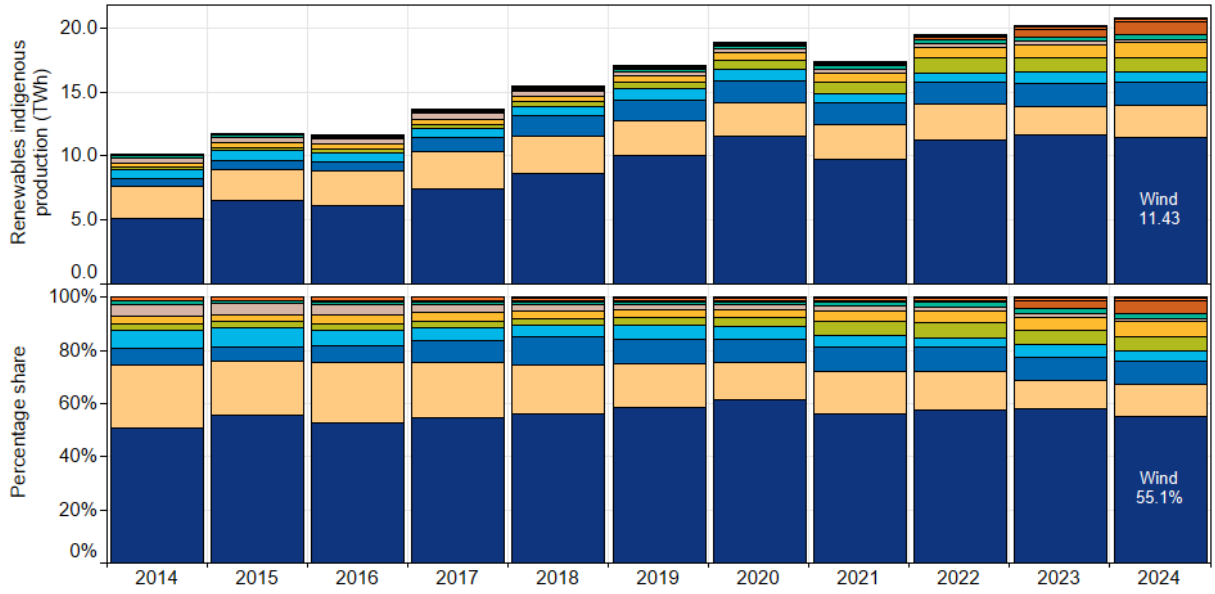


A.2.4 Renewables indigenous energy production by energy sub-product

Figure A.2.4 (top) shows Ireland's indigenous production of renewables with an energy sub-product breakdown.

Figure A.2.4 (bottom) shows the energy sub-product breakdown displayed as a percentage of the renewables indigenous production.

The energy sub-products marked as 'RW', 'AmbHeat', 'LF Gas', and 'Solar-Th' stand for *renewable wastes*, *ambient heat captured by heat pumps*, *landfill gas*, and *solar thermal*, respectively.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Wind	5.14 (50.6%)	6.57 (55.8%)	6.15 (52.6%)	7.45 (54.5%)	8.64 (55.9%)	10.02 (58.7%)	11.55 (61.2%)	9.78 (56.3%)	11.21 (57.6%)	11.67 (57.9%)	11.43 (55.1%)
Biomass	2.45 (24.1%)	2.36 (20.0%)	2.66 (22.8%)	2.88 (21.1%)	2.89 (18.7%)	2.76 (16.2%)	2.64 (14.0%)	2.70 (15.6%)	2.81 (14.5%)	2.18 (10.8%)	2.53 (12.2%)
RW	0.60 (5.9%)	0.66 (5.6%)	0.74 (6.4%)	1.09 (8.0%)	1.63 (10.5%)	1.59 (9.3%)	1.69 (8.9%)	1.67 (9.6%)	1.76 (9.1%)	1.79 (8.9%)	1.81 (8.7%)
Hydro	0.71 (7.0%)	0.81 (6.8%)	0.68 (5.8%)	0.69 (5.1%)	0.69 (4.5%)	0.89 (5.2%)	0.93 (4.9%)	0.75 (4.3%)	0.70 (3.6%)	0.94 (4.7%)	0.77 (3.7%)
Biodiesel	0.26 (2.6%)	0.28 (2.4%)	0.28 (2.4%)	0.33 (2.4%)	0.36 (2.3%)	0.48 (2.8%)	0.63 (3.3%)	0.90 (5.2%)	1.16 (5.9%)	1.06 (5.2%)	1.08 (5.2%)
AmbHeat	0.27 (2.6%)	0.31 (2.7%)	0.38 (3.2%)	0.41 (3.0%)	0.43 (2.8%)	0.50 (2.9%)	0.58 (3.1%)	0.67 (3.8%)	0.83 (4.3%)	1.02 (5.0%)	1.21 (5.8%)
LF Gas	0.45 (4.5%)	0.49 (4.1%)	0.46 (3.9%)	0.45 (3.3%)	0.39 (2.5%)	0.37 (2.2%)	0.34 (1.8%)	0.34 (2.0%)	0.30 (1.5%)	0.28 (1.4%)	0.27 (1.3%)
Biogas	0.15 (1.5%)	0.16 (1.3%)	0.19 (1.6%)	0.19 (1.4%)	0.20 (1.3%)	0.22 (1.3%)	0.24 (1.3%)	0.26 (1.5%)	0.32 (1.6%)	0.32 (1.6%)	0.33 (1.6%)
Solar-PV	0.00 (0.0%)	0.00 (0.0%)	0.01 (0.0%)	0.01 (0.1%)	0.02 (0.1%)	0.03 (0.2%)	0.06 (0.3%)	0.09 (0.5%)	0.15 (0.8%)	0.65 (3.2%)	1.08 (5.2%)
Solar-Th	0.12 (1.2%)	0.13 (1.1%)	0.14 (1.2%)	0.15 (1.1%)	0.16 (1.0%)	0.16 (0.9%)	0.16 (0.9%)	0.16 (0.9%)	0.16 (0.8%)	0.16 (0.8%)	0.16 (0.8%)
Bioethanol				0.00 (0.0%)	0.03 (0.2%)	0.05 (0.3%)	0.04 (0.2%)	0.04 (0.2%)	0.06 (0.3%)	0.08 (0.4%)	0.08 (0.4%)
Indig-Prod. Renew (TWh, %)	**10.16 (100.0%)**	**11.78 (100.0%)**	**11.69 (100.0%)**	**13.65 (100.0%)**	**15.45 (100.0%)**	**17.07 (100.0%)**	**18.86 (100.0%)**	**17.36 (100.0%)**	**19.46 (100.0%)**	**20.16 (100.0%)**	**20.75 (100.0%)**

Appendix 3. Ireland's international import and export of energy

International import and export of energy corresponds to energy that has crossed Ireland's national boundaries, into and out of the country, respectively.

Import and export data has been informed by survey responses received from organisations, including energy producers, import/export companies, network operators and energy supply companies. It is also includes aggregated public administrative data from the Revenue Commissioners and the Oil Levy Assessment (OLA) database.

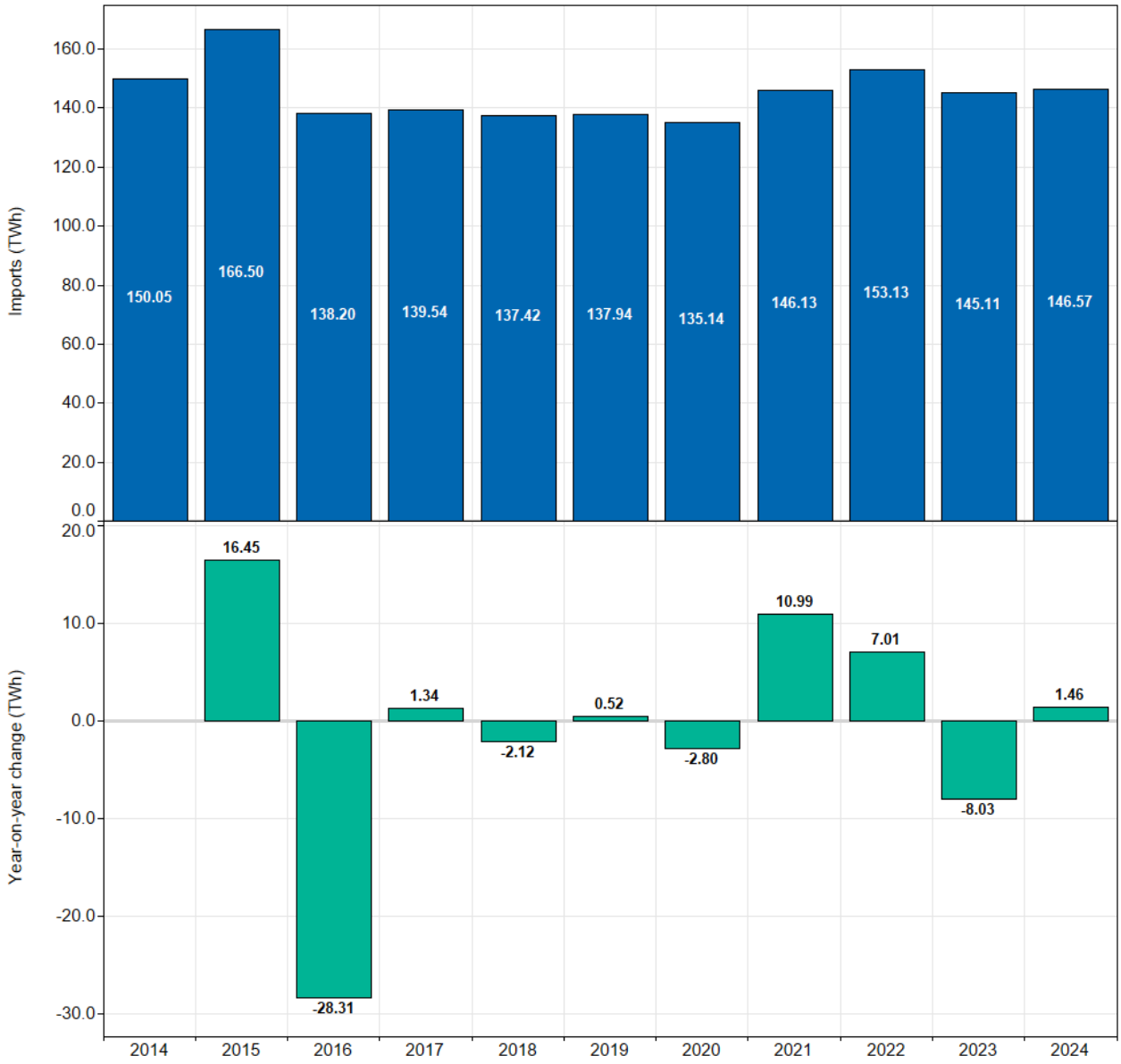
Data is collected in a range of physical and energy units based on the energy sub-product type (*e.g.* kilotonnes, kilolitres, terajoules, million cubic meters, gigawatt hours) and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) by SEAI using conversion factors on a net calorific value basis.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.3.1 Energy imports and annual change

Figure A.3.1 (top) shows Ireland's annual total energy imports for the last 11-years.

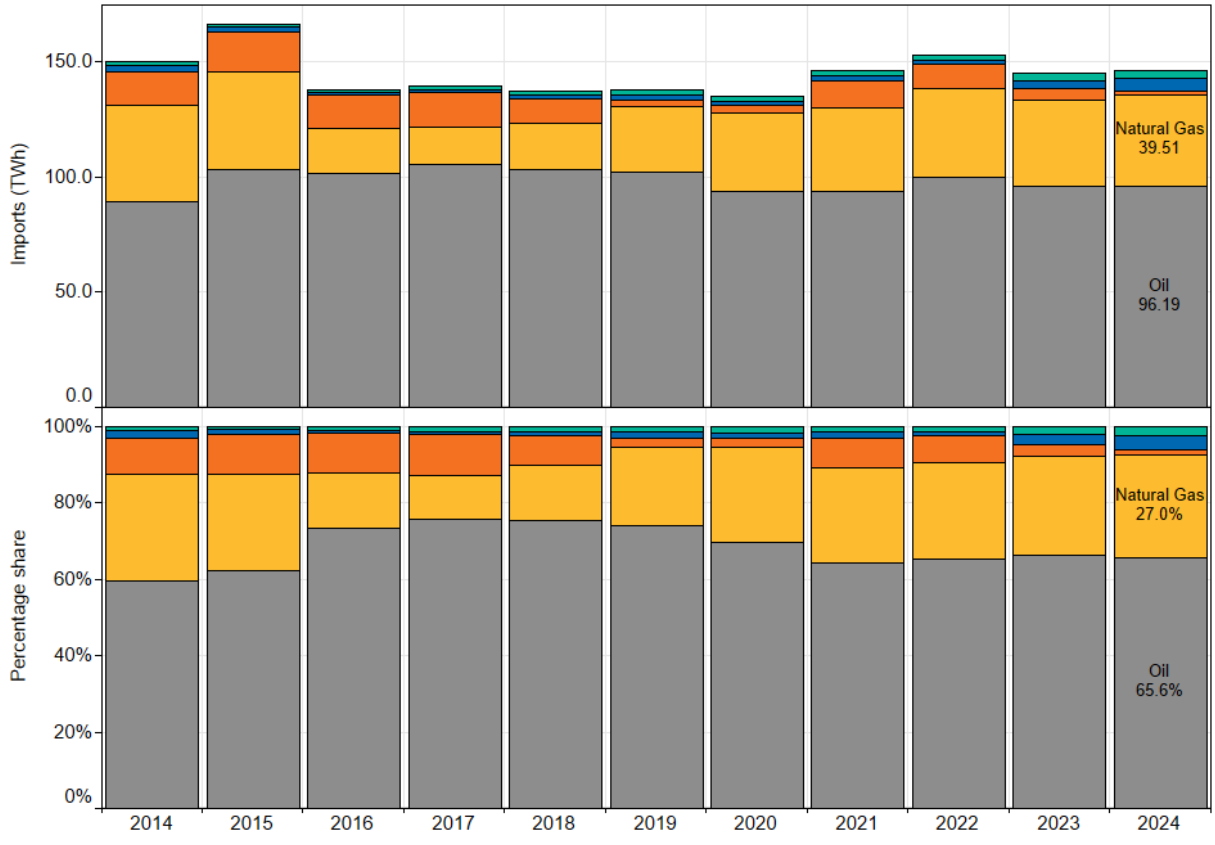
Figure A.3.1 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual total energy imports, *i.e.* the value in 2024 is the difference between the total energy imports in 2024 *vs.* 2023. Non-energy subproducts are excluded.



A.3.2 Energy imports by energy product

Figure A.3.2 (top) shows Ireland's total energy imports with an energy product breakdown.

Figure A.3.2 (bottom) shows the energy product breakdown displayed as a percentage of the total energy imports (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

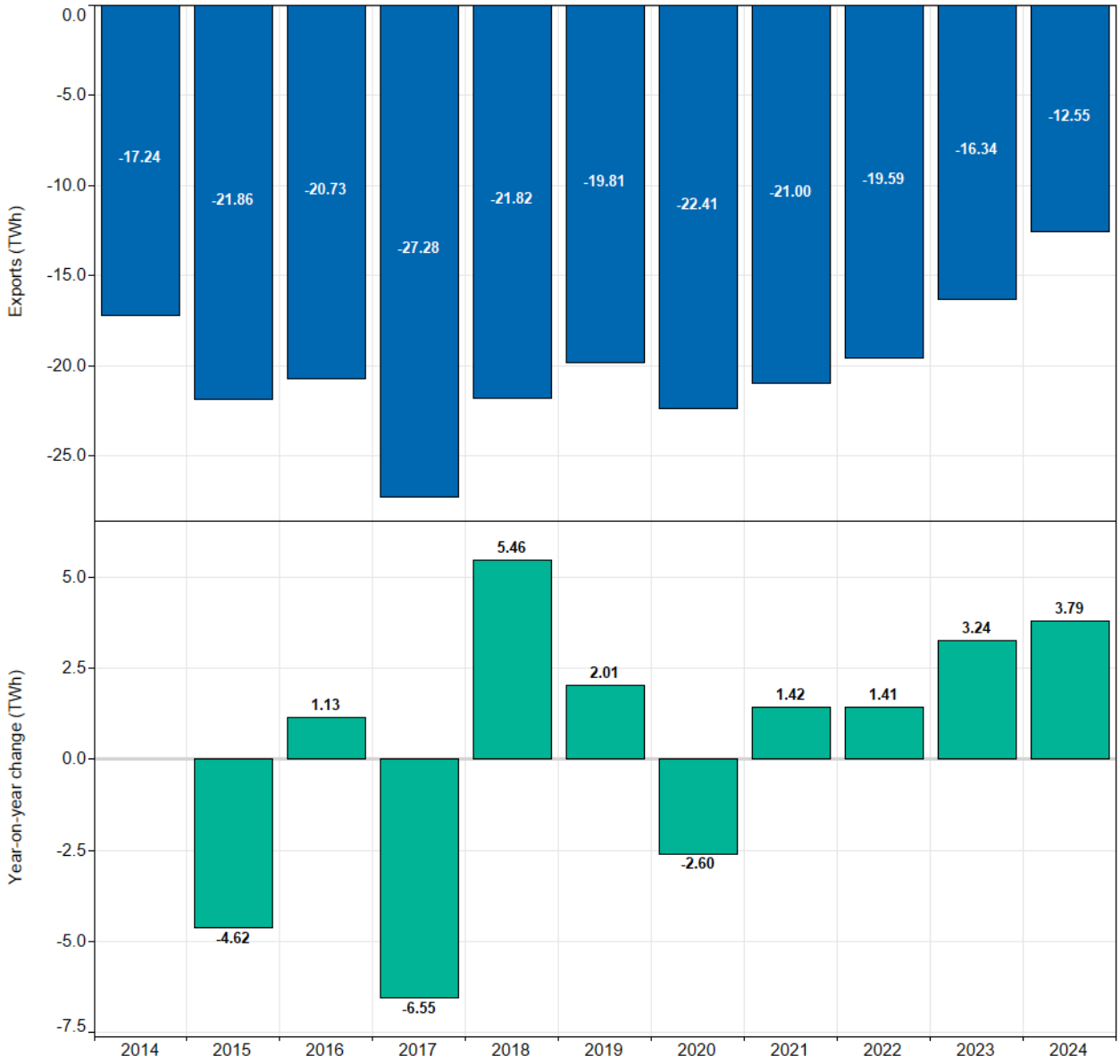


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Oil	89.58 (59.7%)	103.42 (62.1%)	101.56 (73.5%)	105.44 (75.6%)	103.40 (75.2%)	102.26 (74.1%)	94.10 (69.6%)	94.06 (64.4%)	99.96 (65.3%)	96.29 (66.4%)	96.19 (65.6%)
Natural Gas	41.75 (27.8%)	42.20 (25.3%)	19.82 (14.3%)	16.38 (11.7%)	20.10 (14.6%)	28.20 (20.4%)	33.84 (25.0%)	36.35 (24.9%)	38.45 (25.1%)	37.39 (25.8%)	39.51 (27.0%)
Coal	14.32 (9.5%)	17.69 (10.6%)	14.32 (10.4%)	14.75 (10.6%)	10.51 (7.6%)	3.15 (2.3%)	3.16 (2.3%)	11.46 (7.8%)	10.96 (7.2%)	4.67 (3.2%)	1.98 (1.3%)
Electricity	2.85 (1.9%)	1.75 (1.1%)	0.87 (0.6%)	1.12 (0.8%)	1.62 (1.2%)	2.18 (1.6%)	1.76 (1.3%)	2.45 (1.7%)	1.58 (1.0%)	3.72 (2.6%)	5.27 (3.6%)
Renewables	1.54 (1.0%)	1.45 (0.9%)	1.62 (1.2%)	1.85 (1.3%)	1.78 (1.3%)	2.15 (1.6%)	2.27 (1.7%)	1.81 (1.2%)	2.18 (1.4%)	3.04 (2.1%)	3.62 (2.5%)
Imports (TWh, %)	**150.05 (100.0%)**	**166.50 (100.0%)**	**138.20 (100.0%)**	**139.54 (100.0%)**	**137.42 (100.0%)**	**137.94 (100.0%)**	**135.14 (100.0%)**	**146.13 (100.0%)**	**153.13 (100.0%)**	**145.11 (100.0%)**	**146.57 (100.0%)**

A.3.3 Energy exports and annual change

Figure A.3.3 (top) shows Ireland's annual total energy exports for the last 11-years.

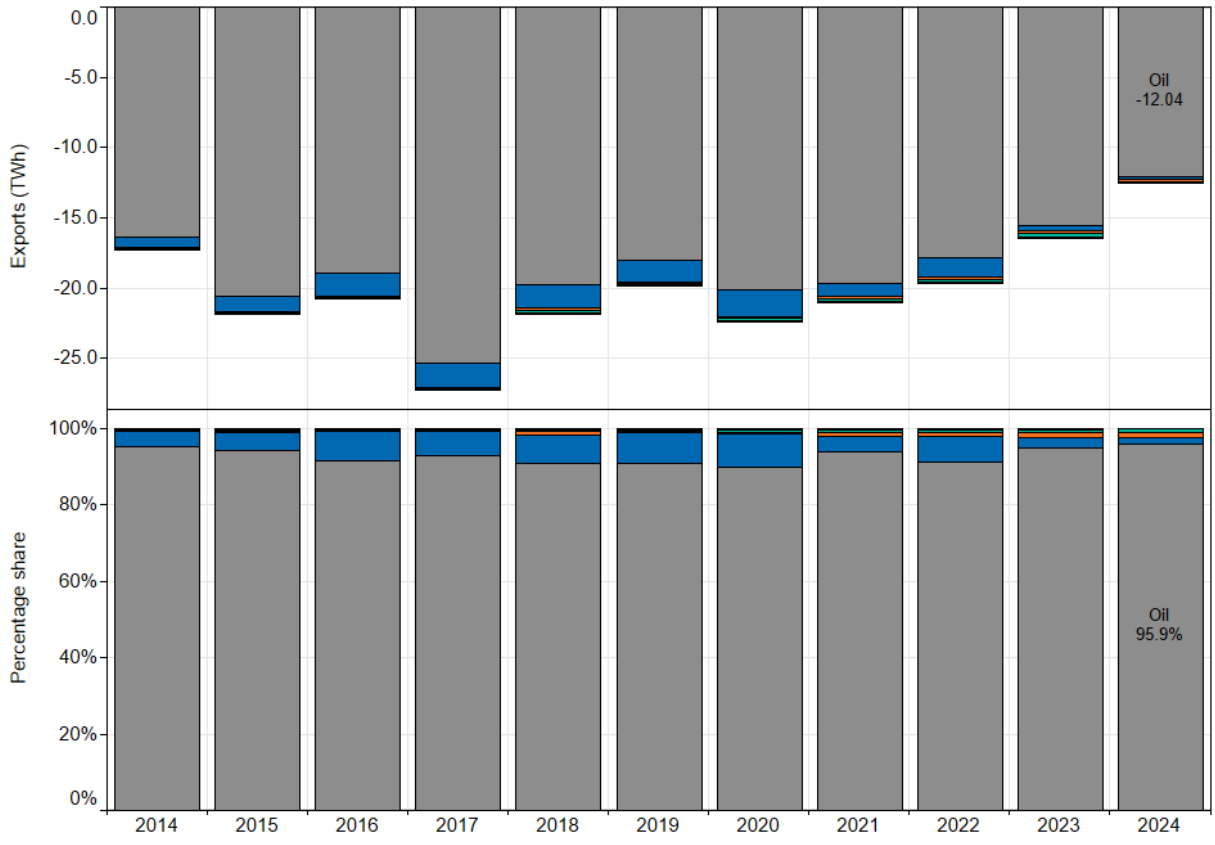
Figure A.3.3 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual total energy exports, *i.e.* the value in 2024 is the difference between the total energy exports in 2024 *vs.* 2023 (excluding non-energy sub-products, i.e. bitumen, lubricants and white spitits, etc.).



A.3.4 Energy exports by energy product

Figure A.3.4 (top) shows Ireland's total energy exports with an energy product breakdown.

Figure A.3.4 (bottom) shows the energy product breakdown displayed as a percentage of the total energy exports (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spitits, *etc.*).



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Oil	-16.40 (95.1%)	-20.57 (94.1%)	-18.98 (91.6%)	-25.31 (92.8%)	-19.80 (90.8%)	-18.03 (91.0%)	-20.15 (89.9%)	-19.70 (93.8%)	-17.86 (91.2%)	-15.52 (95.0%)	-12.04 (95.9%)
Electricity	-0.70 (4.1%)	-1.08 (4.9%)	-1.58 (7.6%)	-1.80 (6.6%)	-1.65 (7.6%)	-1.54 (7.7%)	-1.91 (8.5%)	-0.86 (4.1%)	-1.33 (6.8%)	-0.45 (2.7%)	-0.21 (1.7%)
Coal	-0.12 (0.7%)	-0.13 (0.6%)	-0.11 (0.5%)	-0.11 (0.4%)	-0.18 (0.8%)	-0.10 (0.5%)	-0.08 (0.4%)	-0.20 (1.0%)	-0.21 (1.1%)	-0.18 (1.1%)	-0.16 (1.3%)
Renewables	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	-0.11 (0.5%)	-0.08 (0.4%)	-0.19 (0.9%)	-0.20 (1.0%)	-0.17 (0.9%)	-0.19 (1.2%)	-0.14 (1.1%)
Peat	-0.02 (0.1%)	-0.08 (0.4%)	-0.05 (0.3%)	-0.06 (0.2%)	-0.08 (0.4%)	-0.07 (0.3%)	-0.07 (0.3%)	-0.03 (0.1%)	-0.01 (0.1%)	0.00 (0.0%)	
Exports (TWh, %)	**-17.24 (100.0%)**	**-21.86 (100.0%)**	**-20.73 (100.0%)**	**-27.28 (100.0%)**	**-21.82 (100.0%)**	**-19.81 (100.0%)**	**-22.41 (100.0%)**	**-21.00 (100.0%)**	**-19.59 (100.0%)**	**-16.34 (100.0%)**	**-12.55 (100.0%)**

Appendix 4. Trends in key renewable energy supply

Renewables supply, transformation and, exchange and transfers data has been informed by survey responses, as well as generation and capacity data received from organisations, including energy producers, import/export companies and energy supply companies. It also includes multiple public administration datasets including EU-ETS data and other environmental data from provided by the Environmental Protection Agency (EPA), other evironmental data from the EPA, the Oil Levy Assessment (OLA), and SEAI grant data, along with historical data from the Heat Pump Association of Ireland.

Data is collected in a range of physical and energy units based on the energy sub-product type (*e.g.* kilotonnes, kilolitres, terajoules, gigawatt hours) and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) by SEAI using conversion factors on a net calorific value basis.

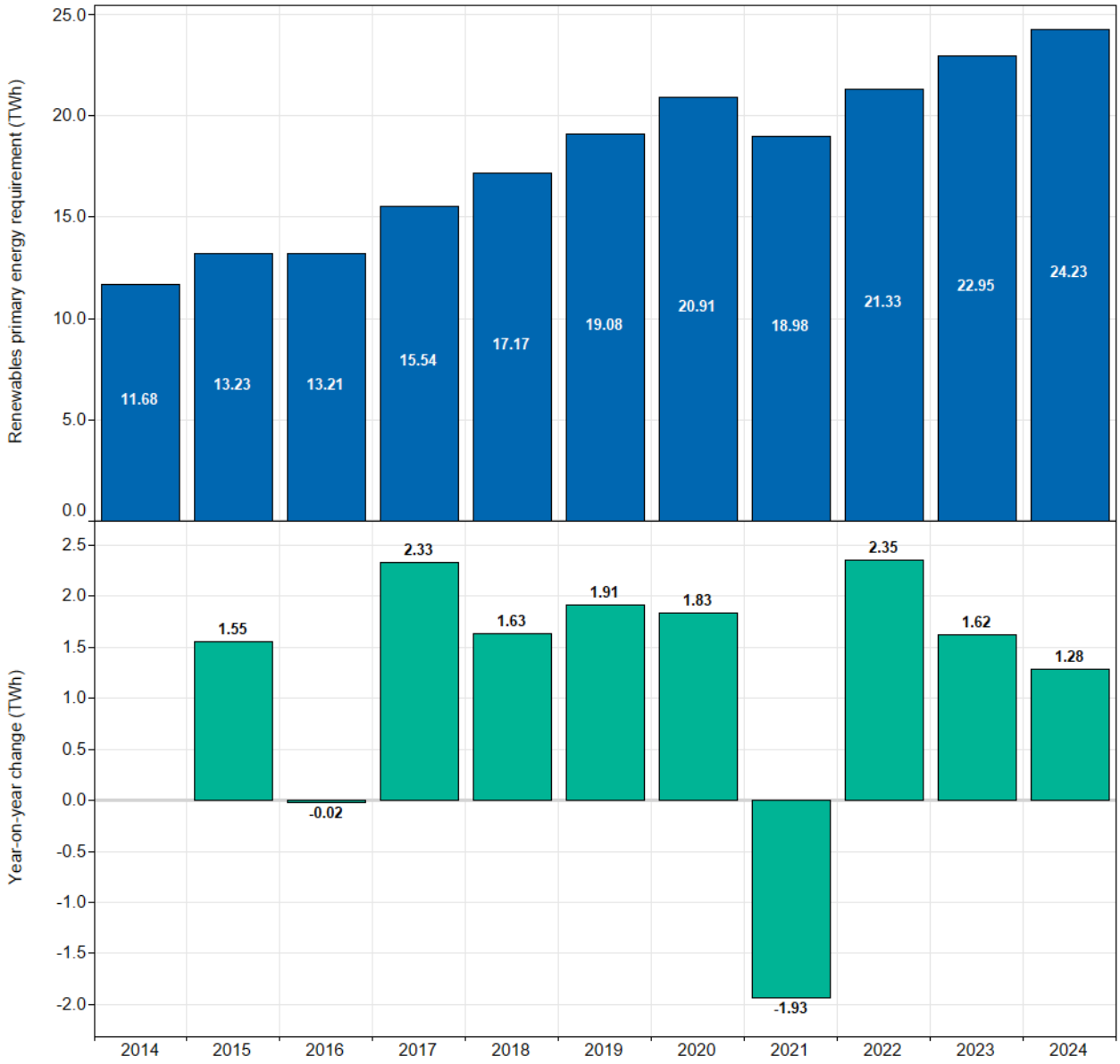
Electricity generation from non-combustible renewable sources (*e.g.* wind, hydro, solar PV) have been set at 100% efficient as electricity production is the first point of measurement for these renewable sub-types.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.4.1 Renewables – primary energy requirement and annual change

Figure A.4.1 (top) shows Ireland's annual renewables primary energy requirement for the last 11-years.

Figure A.4.1 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual renewables primary energy requirement, *i.e.* the value in 2024 is the difference between the renewables primary energy requirement in 2024 *vs.* 2023.

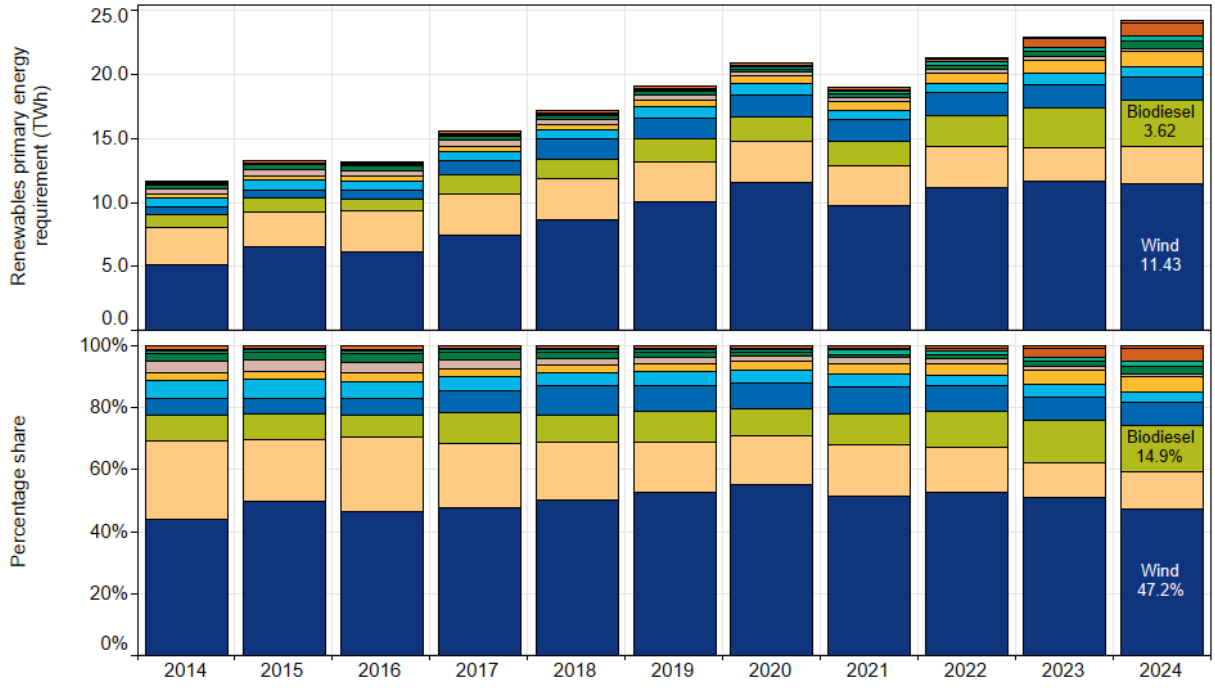


A.4.2 Renewables – primary energy requirement by energy sub-product

Figure A.4.2 (top) shows Ireland's annual renewables primary energy requirement with an energy sub-product breakdown.

Figure A.4.2 (bottom) shows the energy sub-product breakdown displayed as a percentage of the total renewable primary energy requirement.

The energy sub-products marked as 'RW', 'AmbHeat', 'LF Gas', and 'Solar-Th' stand for *renewable wastes*, *ambient heat captured by heat pumps*, *landfill gas*, and *solar thermal*, respectively.

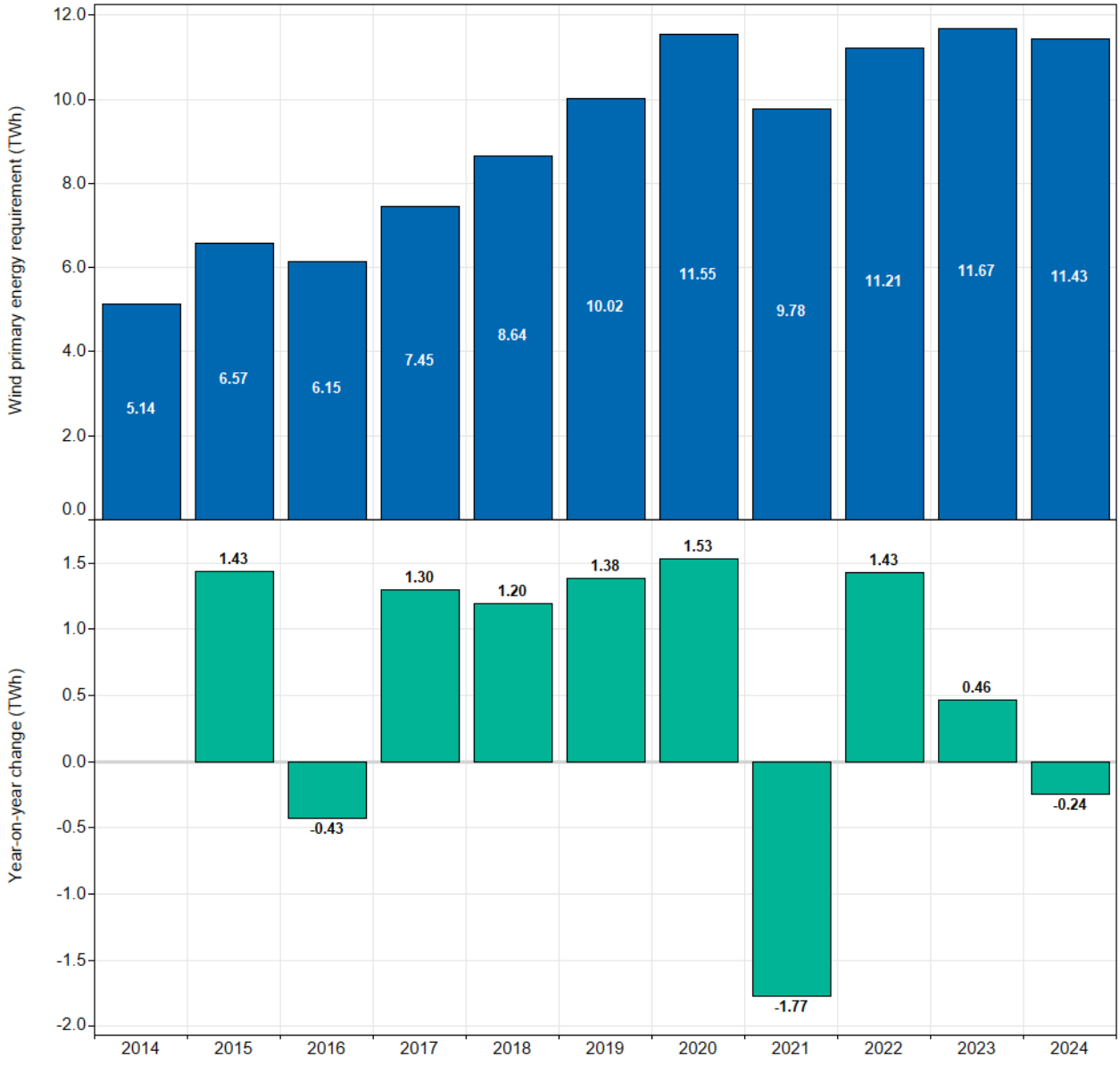


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Wind	5.14 (44.0%)	6.57 (49.7%)	6.15 (46.5%)	7.45 (47.9%)	8.64 (50.3%)	10.02 (52.5%)	11.55 (55.2%)	9.78 (51.5%)	11.21 (52.6%)	11.67 (50.9%)	11.43 (47.2%)
Biomass	2.94 (25.2%)	2.67 (20.1%)	3.18 (24.1%)	3.22 (20.7%)	3.19 (18.6%)	3.10 (16.2%)	3.28 (15.7%)	3.14 (16.5%)	3.14 (14.7%)	2.59 (11.3%)	2.97 (12.2%)
Biodiesel	1.00 (8.6%)	1.09 (8.3%)	0.92 (6.9%)	1.53 (9.9%)	1.50 (8.7%)	1.89 (9.9%)	1.84 (8.8%)	1.89 (10.0%)	2.48 (11.6%)	3.12 (13.6%)	3.62 (14.9%)
RW	0.60 (5.1%)	0.66 (5.0%)	0.74 (5.6%)	1.09 (7.0%)	1.63 (9.5%)	1.59 (8.3%)	1.69 (8.1%)	1.67 (8.8%)	1.76 (8.3%)	1.79 (7.8%)	1.81 (7.5%)
Hydro	0.71 (6.1%)	0.81 (6.1%)	0.68 (5.2%)	0.69 (4.5%)	0.69 (4.0%)	0.89 (4.6%)	0.93 (4.5%)	0.75 (3.9%)	0.70 (3.3%)	0.94 (4.1%)	0.77 (3.2%)
AmbHeat	0.27 (2.3%)	0.31 (2.4%)	0.38 (2.8%)	0.41 (2.7%)	0.43 (2.5%)	0.50 (2.6%)	0.58 (2.8%)	0.67 (3.5%)	0.83 (3.9%)	1.02 (4.4%)	1.21 (5.0%)
LF Gas	0.45 (3.9%)	0.49 (3.7%)	0.46 (3.5%)	0.45 (2.9%)	0.39 (2.3%)	0.37 (1.9%)	0.34 (1.6%)	0.34 (1.8%)	0.30 (1.4%)	0.28 (1.2%)	0.27 (1.1%)
Bioethanol	0.29 (2.5%)	0.33 (2.5%)	0.37 (2.8%)	0.34 (2.2%)	0.32 (1.9%)	0.31 (1.6%)	0.24 (1.1%)	0.23 (1.2%)	0.27 (1.3%)	0.39 (1.7%)	0.59 (2.4%)
Biogas	0.15 (1.3%)	0.16 (1.2%)	0.19 (1.4%)	0.19 (1.2%)	0.20 (1.1%)	0.22 (1.1%)	0.24 (1.2%)	0.26 (1.4%)	0.32 (1.5%)	0.32 (1.4%)	0.33 (1.4%)
Solar-PV	0.00 (0.0%)	0.00 (0.0%)	0.01 (0.0%)	0.01 (0.1%)	0.02 (0.1%)	0.03 (0.2%)	0.06 (0.3%)	0.09 (0.4%)	0.15 (0.7%)	0.65 (2.8%)	1.08 (4.4%)
Solar-Th	0.12 (1.1%)	0.13 (1.0%)	0.14 (1.1%)	0.15 (0.9%)	0.16 (0.9%)	0.16 (0.8%)	0.16 (0.8%)	0.16 (0.9%)	0.16 (0.8%)	0.16 (0.7%)	0.16 (0.7%)
Renew PER (TWh, %)	**11.68 (100.0%)**	**13.23 (100.0%)**	**13.21 (100.0%)**	**15.54 (100.0%)**	**17.17 (100.0%)**	**19.08 (100.0%)**	**20.91 (100.0%)**	**18.98 (100.0%)**	**21.33 (100.0%)**	**22.95 (100.0%)**	**24.23 (100.0%)**

A.4.3 Wind - primary energy requirement and annual change

Figure A.4.3 (top) shows Ireland's annual wind primary energy requirement for the last 11-years.

Figure A.4.3 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual wind primary energy requirement, *i.e.* the value in 2024 is the difference between the wind primary energy requirement in 2024 *vs.* 2023.

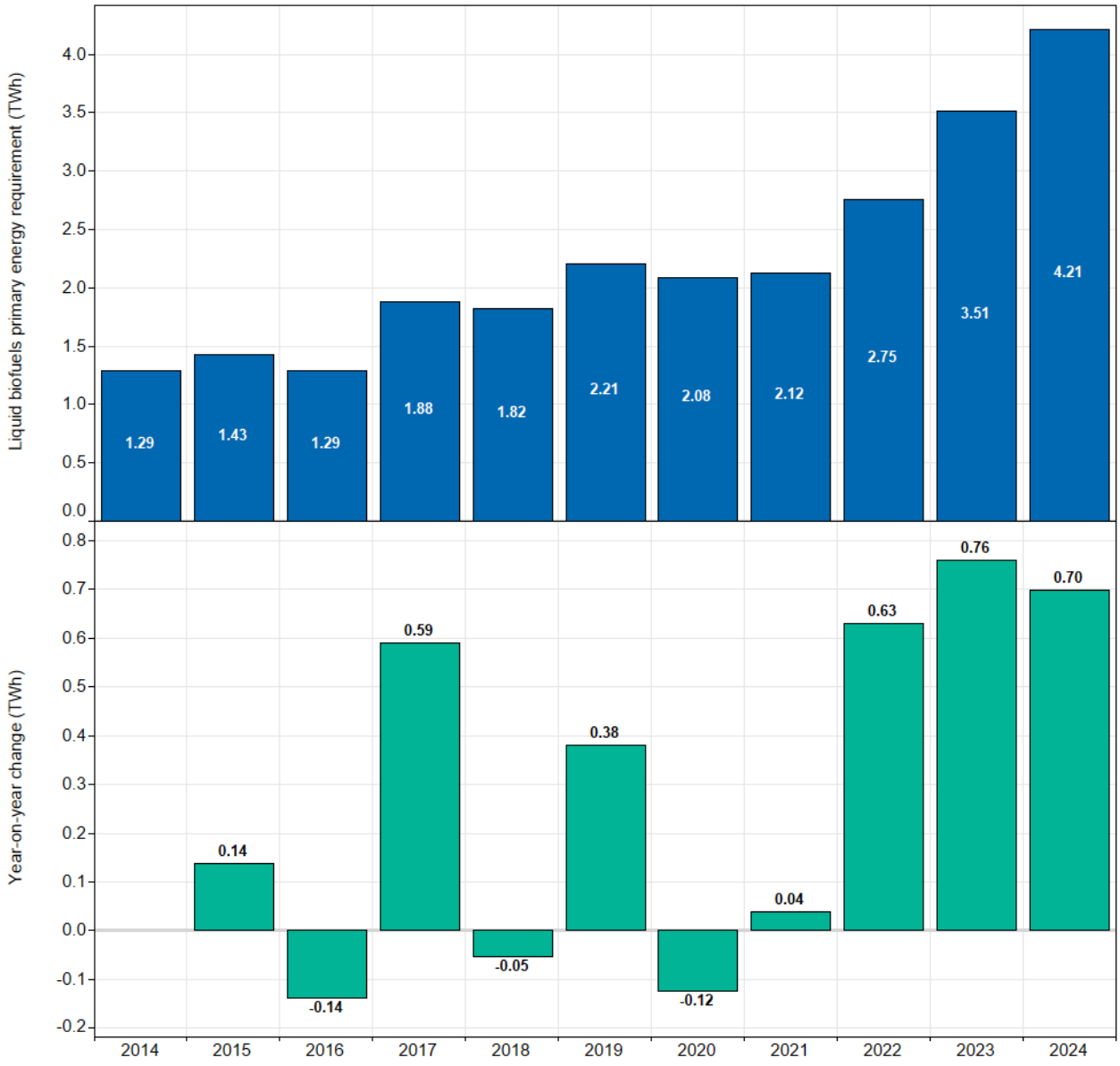


A.4.4 Liquid biofuels - primary energy requirement and annual change

Figure A.4.4 (top) shows Ireland's annual liquid biofuels primary energy requirement for the last 11-years.

Figure A.4.4 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual liquid biofuels primary energy requirement, *i.e.* the value in 2024 is the difference between the liquid biofuels primary energy requirement in 2024 *vs.* 2023.

The energy sub-products aggregated into the 'liquid biofuels' category are biodiesel and bioethanol.



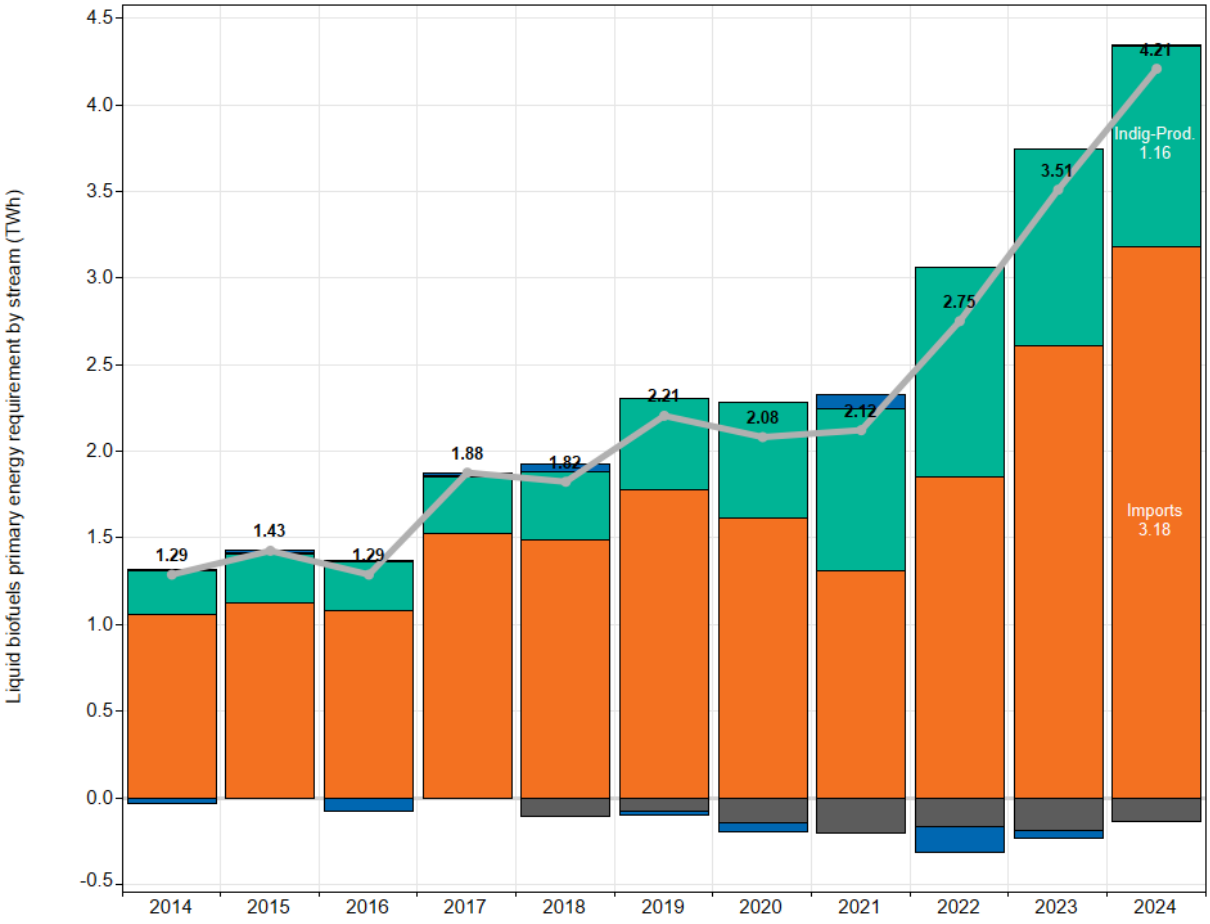
A.4.5 Liquid biofuels - primary energy requirement by stream

Figure A.4.5 shows Ireland's annual liquid biofuels primary energy requirement broken out by stream. The bars show the absolute energy quantity delivered or removed from the liquid biofuel primary energy requirement by each stream and the line shows the net primary energy requirement, calculated as a sum of the individual streams.

Indigenous production, energy imports and net stock draw add to the TPER, while energy exports, marine bunkers and net stock build reduce the value of the primary energy requirement.

The energy sub-products aggregated into the 'liquid biofuels' category are biodiesel and bioethanol.

The streams marked as 'Indig-Prod.' and 'Stk Change' stand for *indigenous production*, and *stock changes*, respectively.



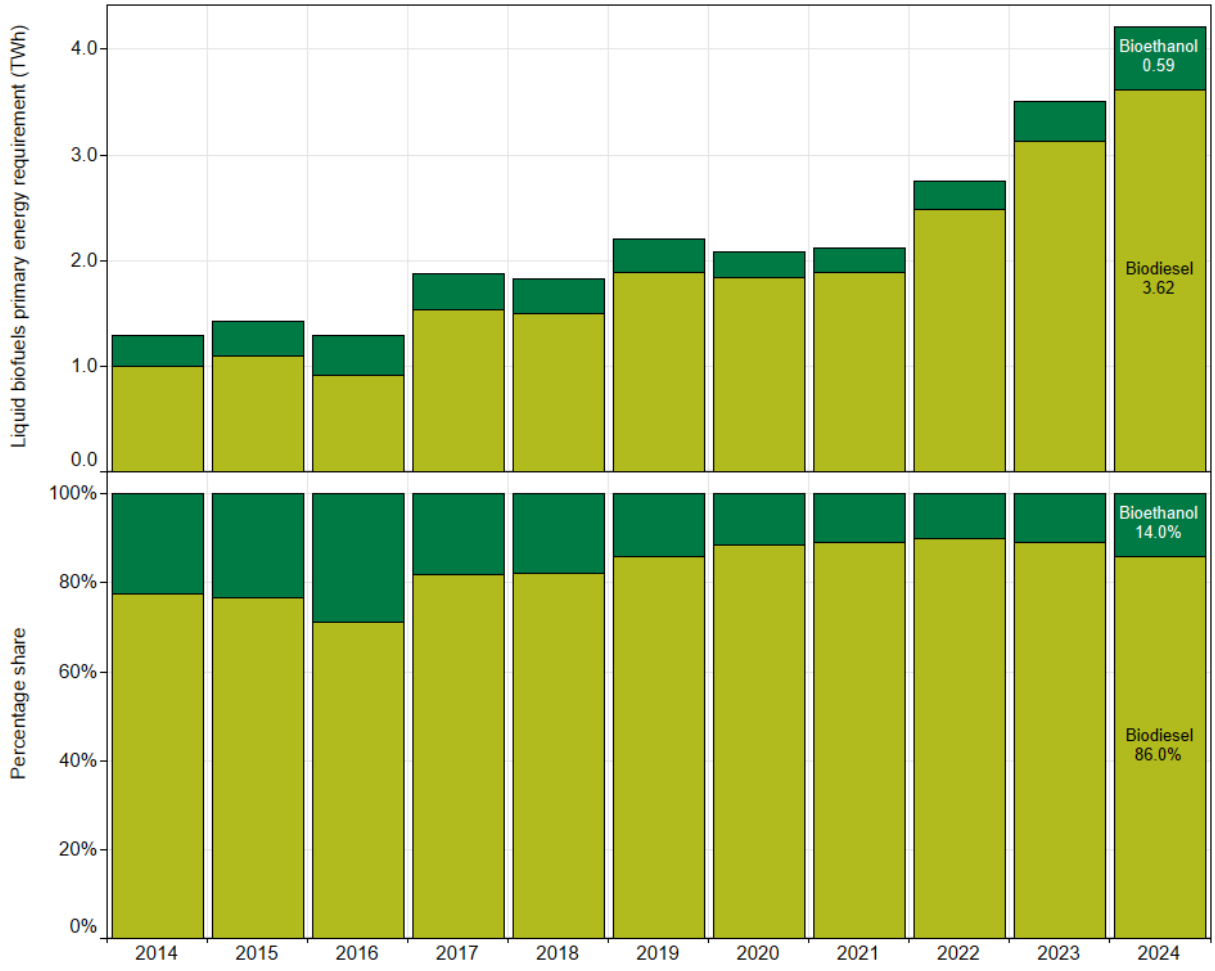
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Imports	1.06	1.13	1.08	1.53	1.49	1.77	1.61	1.31	1.85	2.61	3.18
Indig-Prod.	0.26	0.28	0.28	0.33	0.39	0.53	0.67	0.94	1.21	1.13	1.16
Exports					-0.11	-0.08	-0.15	-0.20	-0.17	-0.19	-0.14
Stk Change	-0.03	0.02	-0.08	0.02	0.05	-0.02	-0.05	0.08	-0.14	-0.05	0.00
Liq. Biof. PER (TWh)	**1.29**	**1.43**	**1.29**	**1.88**	**1.82**	**2.21**	**2.08**	**2.12**	**2.75**	**3.51**	**4.21**

A.4.6 Liquid biofuels - primary energy requirement by energy sub-product

Figure A.4.6 (top) shows Ireland's annual renewables primary energy requirement with an energy sub-product breakdown.

Figure A.4.6 (bottom) shows the energy sub-product breakdown displayed as a percentage of the total liquid biofuels primary energy requirement.

The energy sub-products aggregated into the 'liquid biofuels' category are biodiesel and bioethanol.

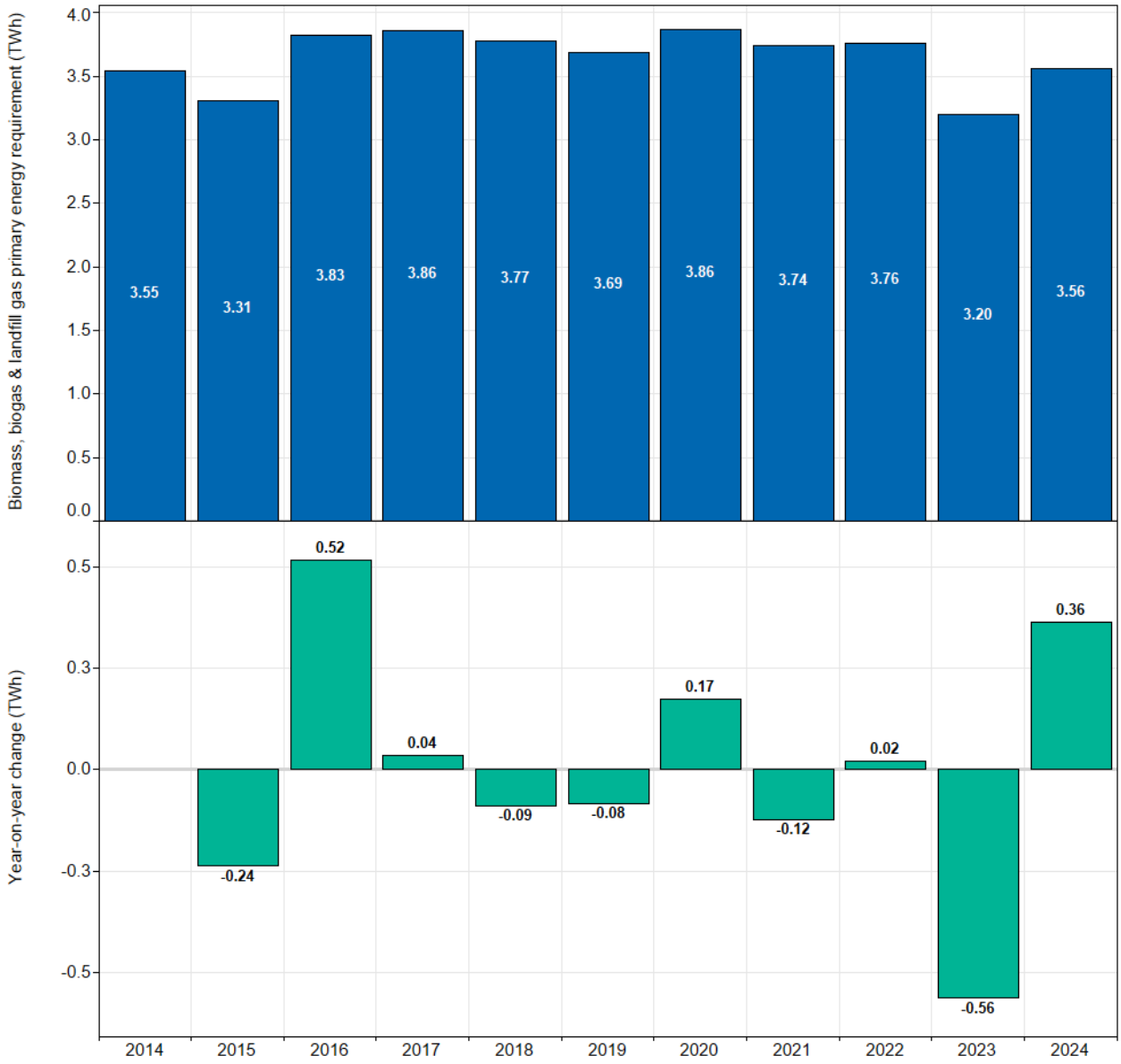


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Biodiesel	1.00 (77.6%)	1.09 (76.7%)	0.92 (71.2%)	1.53 (81.8%)	1.50 (82.2%)	1.89 (85.8%)	1.84 (88.6%)	1.89 (89.1%)	2.48 (90.1%)	3.12 (89.0%)	3.62 (86.0%)
Bioethanol	0.29 (22.4%)	0.33 (23.3%)	0.37 (28.8%)	0.34 (18.2%)	0.32 (17.8%)	0.31 (14.2%)	0.24 (11.4%)	0.23 (10.9%)	0.27 (9.9%)	0.39 (11.0%)	0.59 (14.0%)
Liq. Biof. PER (TWh, %)	**1.29 (100.0%)**	**1.43 (100.0%)**	**1.29 (100.0%)**	**1.88 (100.0%)**	**1.82 (100.0%)**	**2.21 (100.0%)**	**2.08 (100.0%)**	**2.12 (100.0%)**	**2.75 (100.0%)**	**3.51 (100.0%)**	**4.21 (100.0%)**

A.4.7 Biomass, biogas and landfill gas - primary energy requirement and annual change

Figure A.4.7 (top) shows Ireland's annual biomass, biogas and landfill gas primary energy requirement for the last 11-years.

Figure A.4.7 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual biomass, biogas and landfill gas primary energy requirement, *i.e.* the value in 2024 is the difference between the biomass, biogas and landfill gas primary energy requirement in 2024 *vs.* 2023.

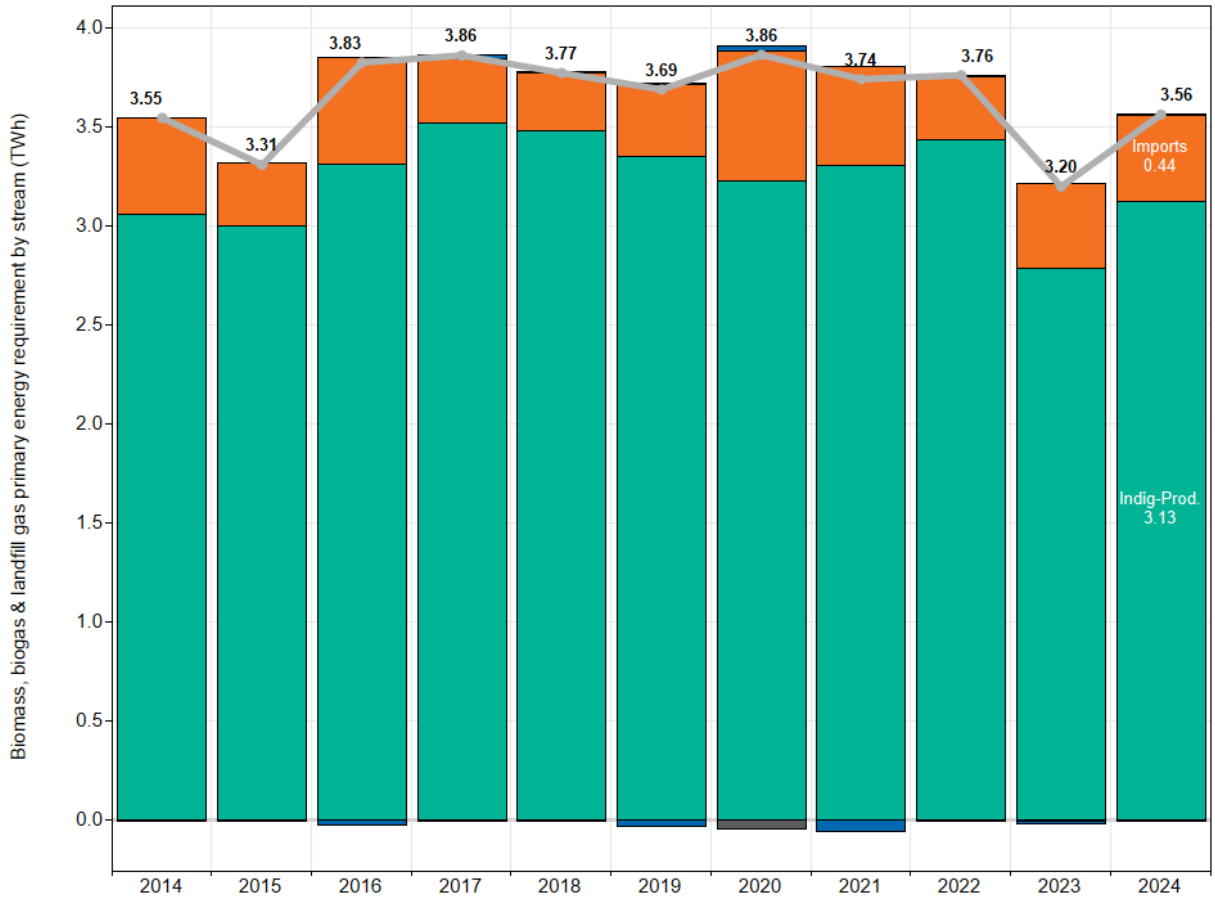


A.4.8 Biomass, biogas and landfill gas - primary energy requirement by stream

Figure A.4.8 shows Ireland's annual biomass, biogas and landfill gas primary energy requirement broken out by stream. The bars show the absolute energy quantity delivered or removed from the biomass, biogas and landfill gas primary energy requirement by each stream and the line shows the net primary energy requirement, calculated as a sum of the individual streams.

Indigenous production, energy imports and net stock draw add to the TPER, while energy exports, marine bunkers and net stock build reduce the value of the primary energy requirement.

The streams marked as 'Indig-Prod.' and 'Stk Change' stand for *indigenous production*, and *stock changes*, respectively.

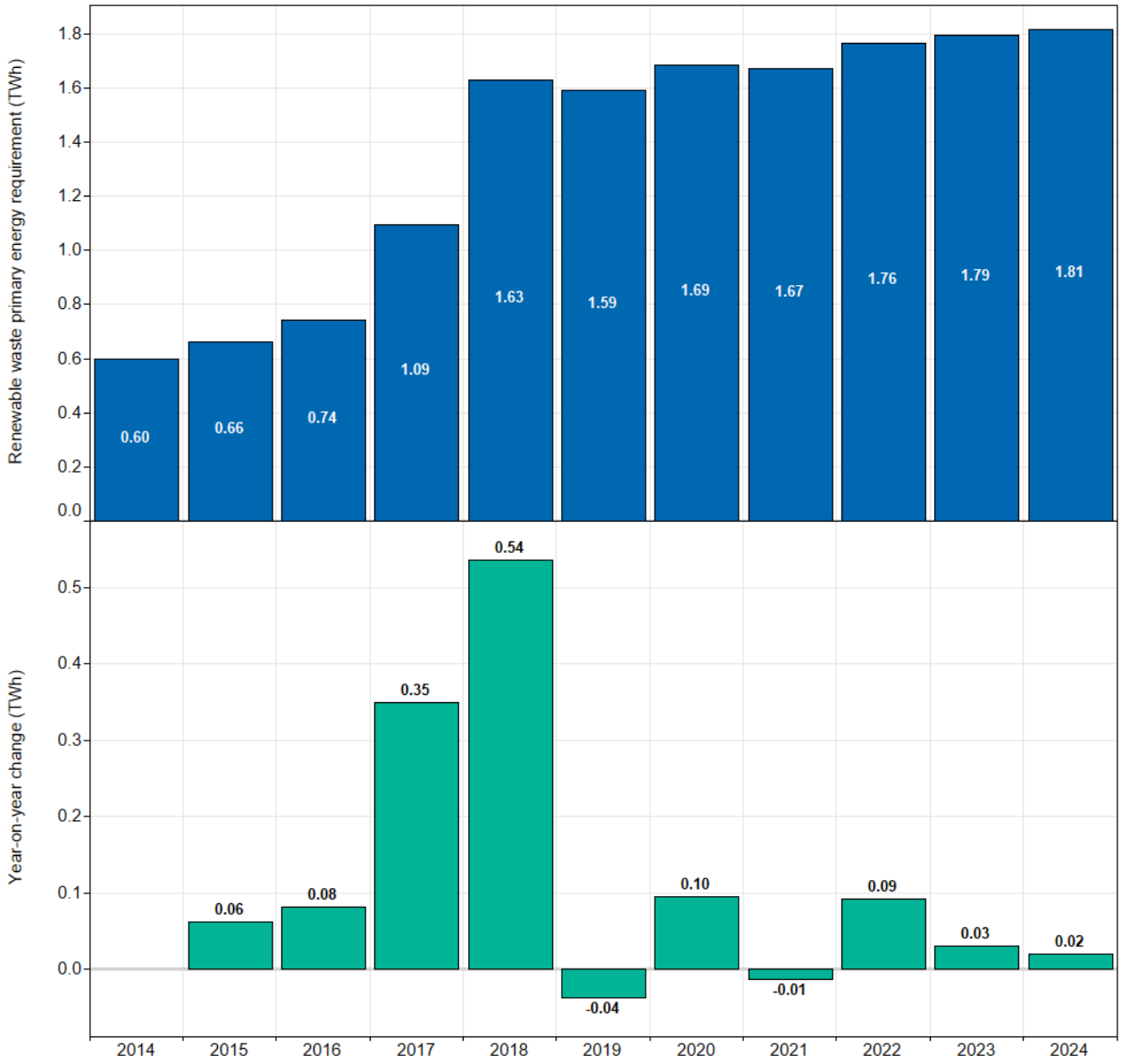


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Indig-Prod.	3.06	3.00	3.31	3.52	3.48	3.35	3.23	3.31	3.43	2.79	3.13
Imports	0.49	0.32	0.54	0.32	0.30	0.38	0.66	0.50	0.33	0.43	0.44
Stk Change	0.00	-0.01	-0.02	0.02	0.00	-0.03	0.03	-0.06	0.00	-0.01	0.01
Exports	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	0.00	0.00	-0.01	-0.01
Bio-M, Bio-G & LF gas PER (TWh)	**3.55**	**3.31**	**3.83**	**3.86**	**3.77**	**3.69**	**3.86**	**3.74**	**3.76**	**3.20**	**3.56**

A.4.9 Renewable waste - primary energy requirement and annual change

Figure A.4.9 (top) shows Ireland's annual renewable waste primary energy requirement for the last 11-years.

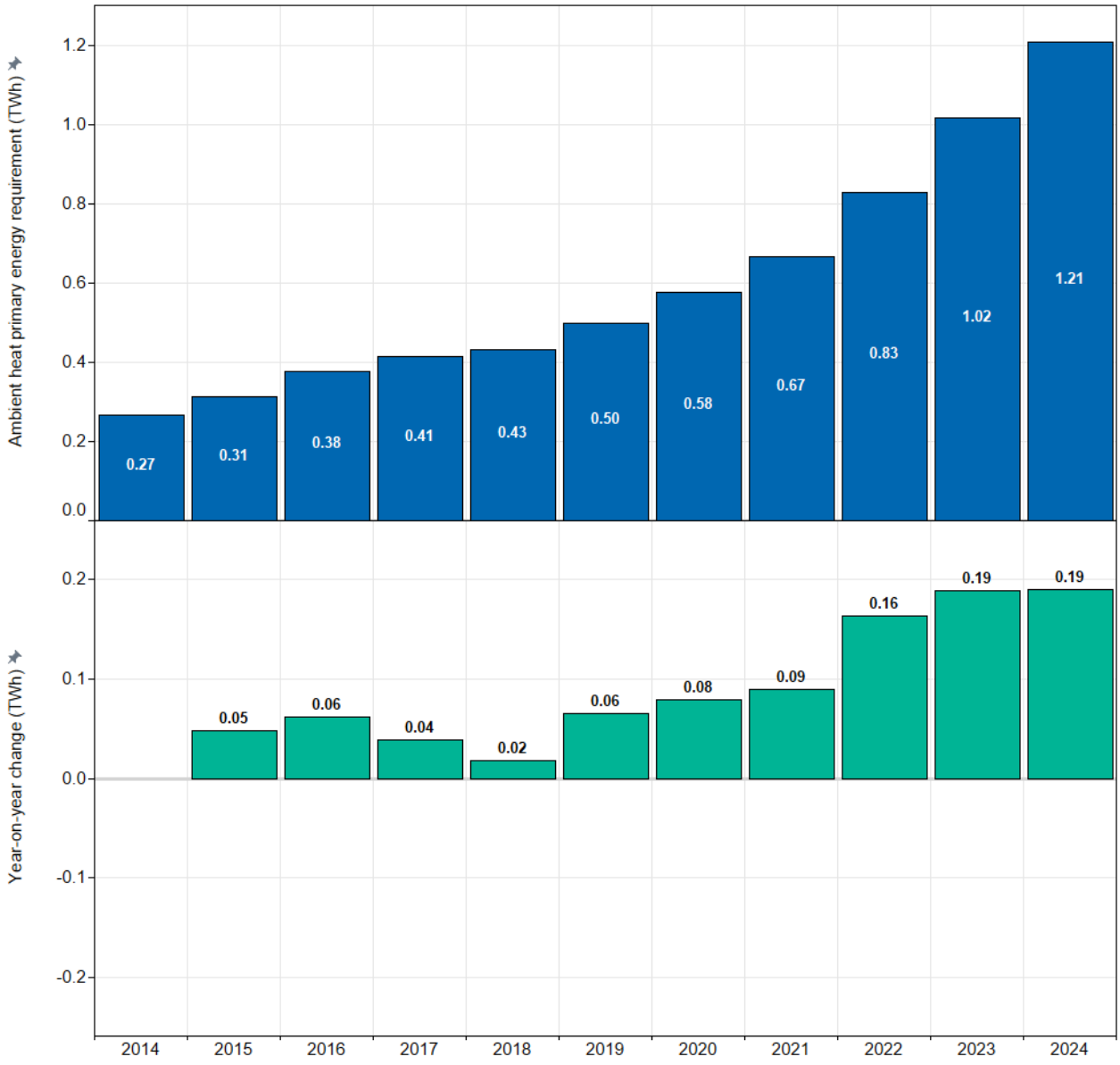
Figure A.4.9 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual renewable waste primary energy requirement, *i.e.* the value in 2024 is the difference between the renewable waste primary energy requirement in 2024 *vs.* 2023.



A.4.10 Ambient heat - primary energy requirement and annual change

Figure A.4.10 (top) shows Ireland's annual ambient heat primary energy requirement for the last 11-years.

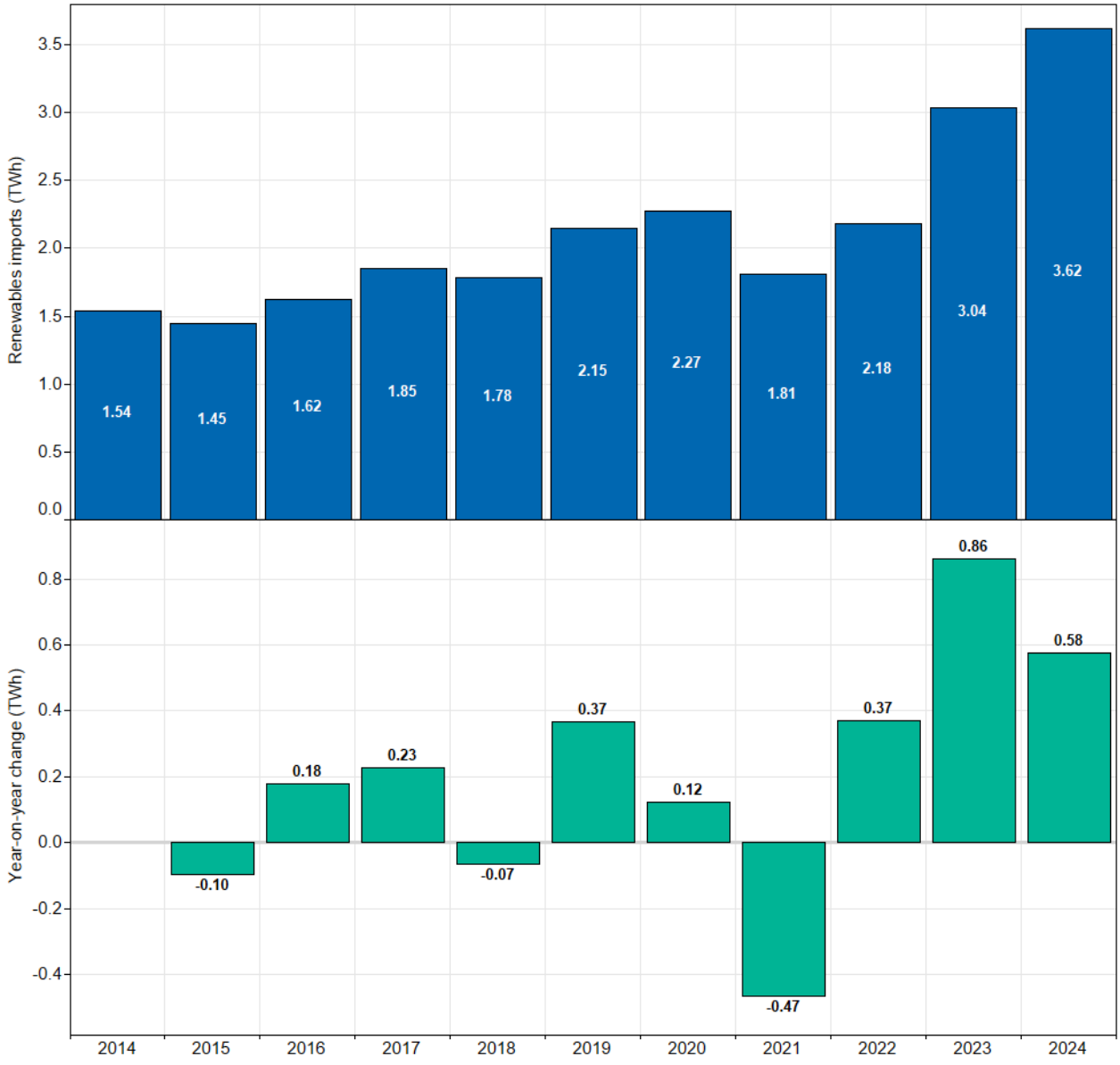
Figure A.4.10 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual ambient heat primary energy requirement, *i.e.* the value in 2024 is the difference between the ambient heat primary energy requirement in 2024 *vs.* 2023.



A.4.11 Renewables – imports and annual change

Figure A.4.11 (top) shows Ireland's annual renewables energy imports for the last 11-years.

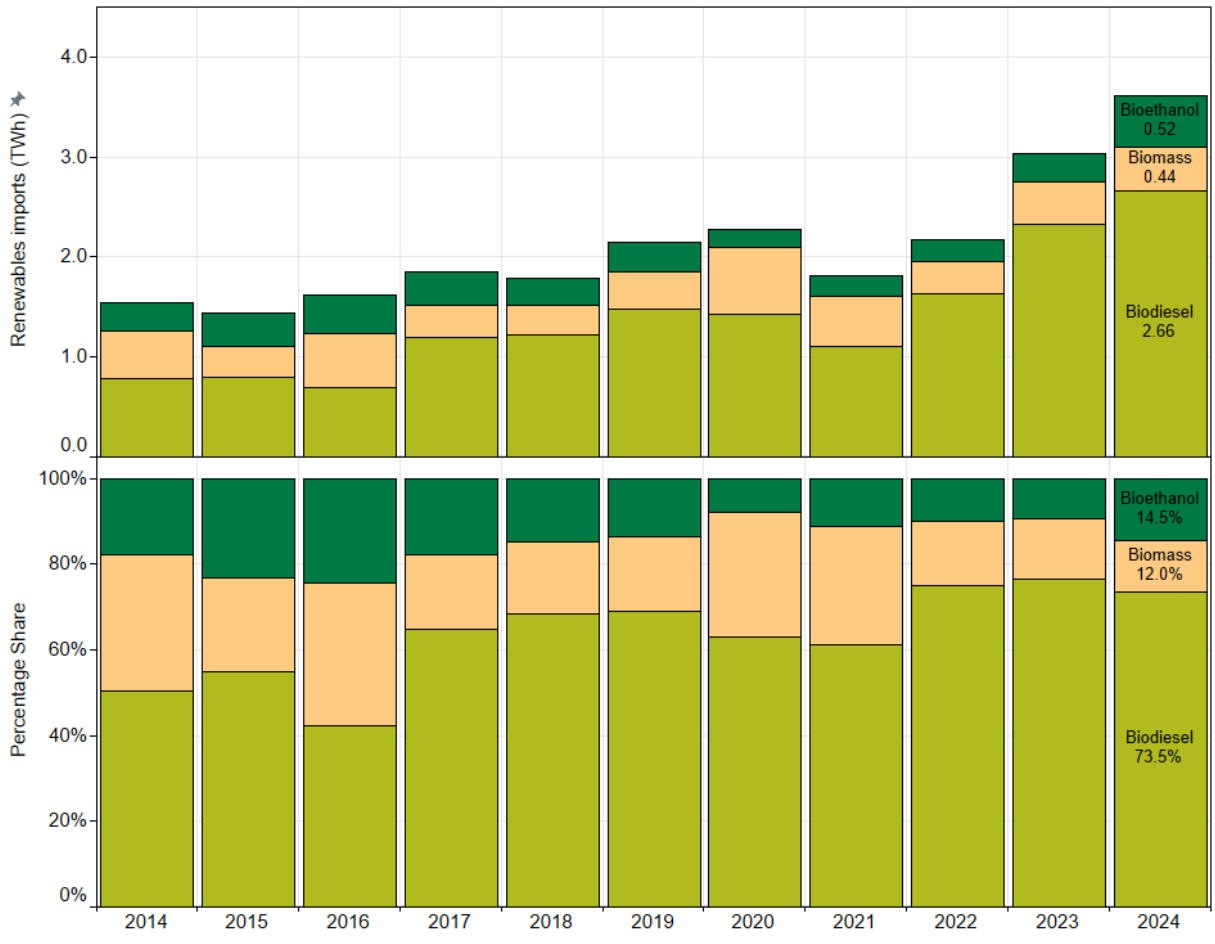
Figure A.4.11 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual renewables energy imports, *i.e.* the value in 2024 is the difference between the renewables energy imports in 2024 *vs.* 2023.



A.4.12 Renewables - imports by energy sub-product

Figure A.4.12 (top) shows Ireland's annual renewables imports with an energy product breakdown.

Figure A.4.12 (bottom) shows the energy product breakdown displayed as a percentage of the renewable imports.

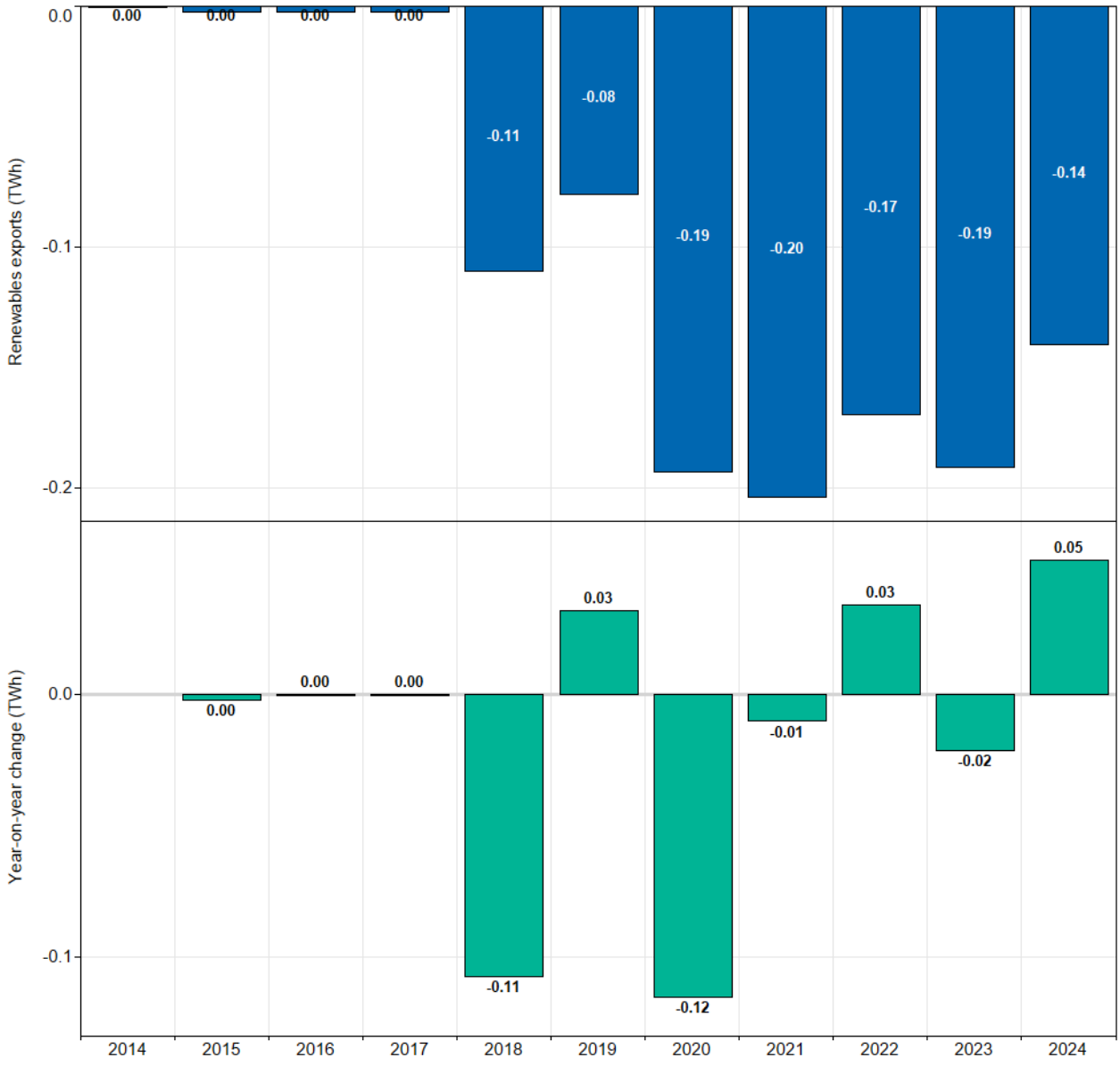


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Biodiesel	0.78 (50.5%)	0.79 (54.8%)	0.69 (42.4%)	1.20 (64.9%)	1.22 (68.5%)	1.48 (68.9%)	1.43 (63.0%)	1.11 (61.3%)	1.63 (74.9%)	2.32 (76.4%)	2.66 (73.5%)
Biomass	0.49 (31.6%)	0.32 (22.0%)	0.54 (33.2%)	0.32 (17.4%)	0.30 (16.6%)	0.38 (17.5%)	0.66 (29.0%)	0.50 (27.6%)	0.33 (15.0%)	0.43 (14.1%)	0.44 (12.0%)
Bioethanol	0.28 (17.9%)	0.34 (23.2%)	0.39 (24.3%)	0.33 (17.8%)	0.27 (14.9%)	0.29 (13.6%)	0.18 (8.0%)	0.20 (11.2%)	0.22 (10.1%)	0.29 (9.5%)	0.52 (14.5%)
Renew imports (TWh, %)	**1.54 (100.0%)**	**1.45 (100.0%)**	**1.62 (100.0%)**	**1.85 (100.0%)**	**1.78 (100.0%)**	**2.15 (100.0%)**	**2.27 (100.0%)**	**1.81 (100.0%)**	**2.18 (100.0%)**	**3.04 (100.0%)**	**3.62 (100.0%)**

A.4.13 Renewables – exports and annual change

Figure A.4.13 (top) shows Ireland's annual renewables energy exports for the last 11-years.

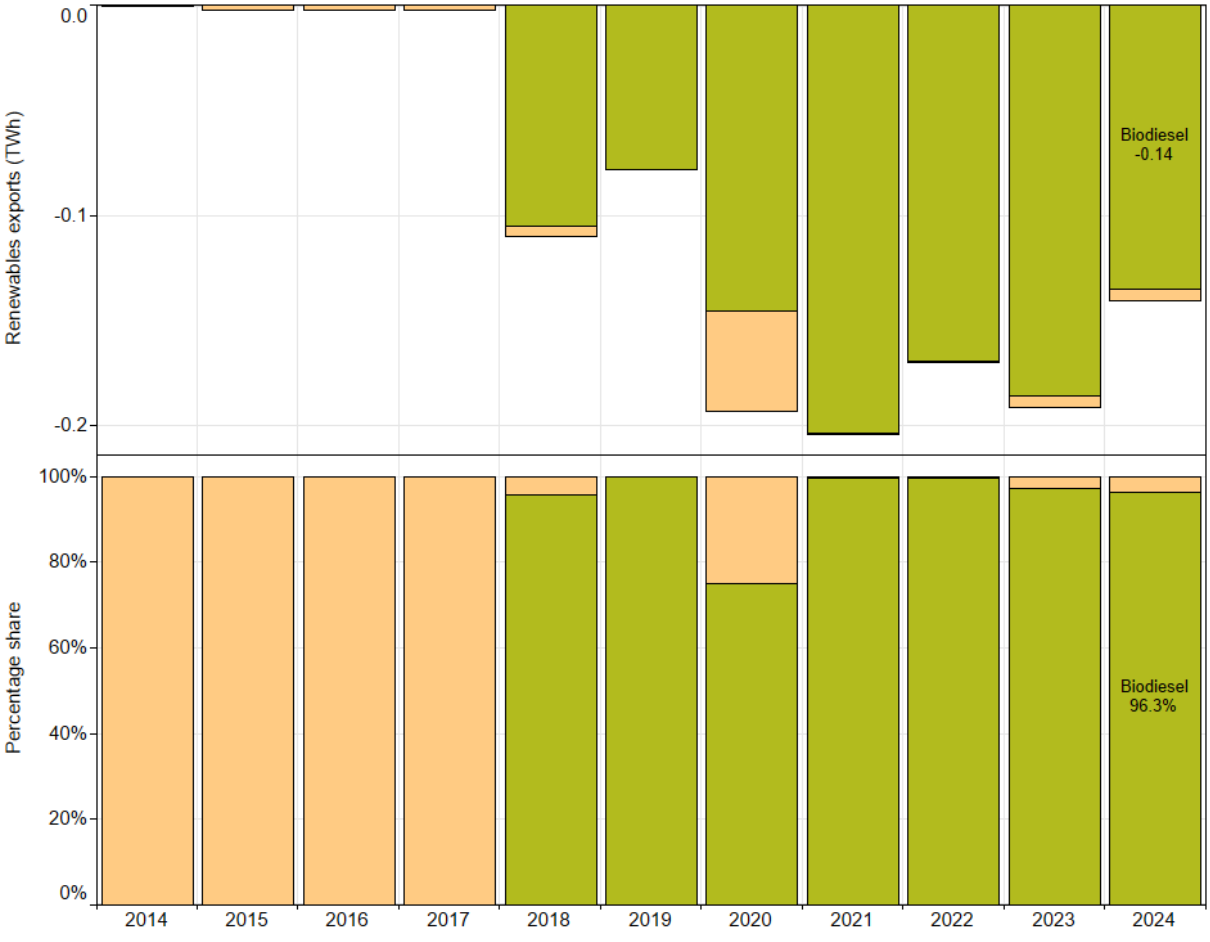
Figure A.4.13 (bottom) is a swing plot that shows the year-on-year changes in Ireland's renewables energy exports, *i.e.* the value in 2024 is the difference between the renewables energy exports in 2024 *vs.* 2023.



A.4.14 Renewables - exports by energy sub-product

Figure A.4.14 (top) shows Ireland's annual renewables exports with an energy product breakdown.

Figure A.4.14 (bottom) shows the energy product breakdown displayed as a percentage of the renewable exports.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Biodiesel					-0.11 (95.6%)	-0.08 (100.0%)	-0.15 (75.0%)	-0.20 (99.9%)	-0.17 (99.9%)	-0.19 (97.2%)	-0.14 (96.3%)
Biomass	0.00 (100.0%)	0.00 (100.0%)	0.00 (100.0%)	0.00 (100.0%)	0.00 (4.4%)		-0.05 (25.0%)	0.00 (0.1%)	0.00 (0.1%)	-0.01 (2.8%)	-0.01 (3.7%)
Renew exports (TWh, %)	**0.00 (100.0%)**	**0.00 (100.0%)**	**0.00 (100.0%)**	**0.00 (100.0%)**	**-0.11 (100.0%)**	**-0.08 (100.0%)**	**-0.19 (100.0%)**	**-0.20 (100.0%)**	**-0.17 (100.0%)**	**-0.19 (100.0%)**	**-0.14 (100.0%)**

Appendix 5. Trends in electricity supply

Electricity supply data from imports, exports, energy product input to electricity generation, electricity outputs and electricity exchange and transfers has been informed by survey responses received from the network operator EirGrid, electricity producers (*i.e.* main activity producers and autoproducers) and suppliers. Data related to electricity exchange and transfers and the transformation of other energy products into electricity (*i.e.* thermally generated electricity) also includes public administrative data including data from SEAI and EU-ETS data provided by the EPA to SEAI.

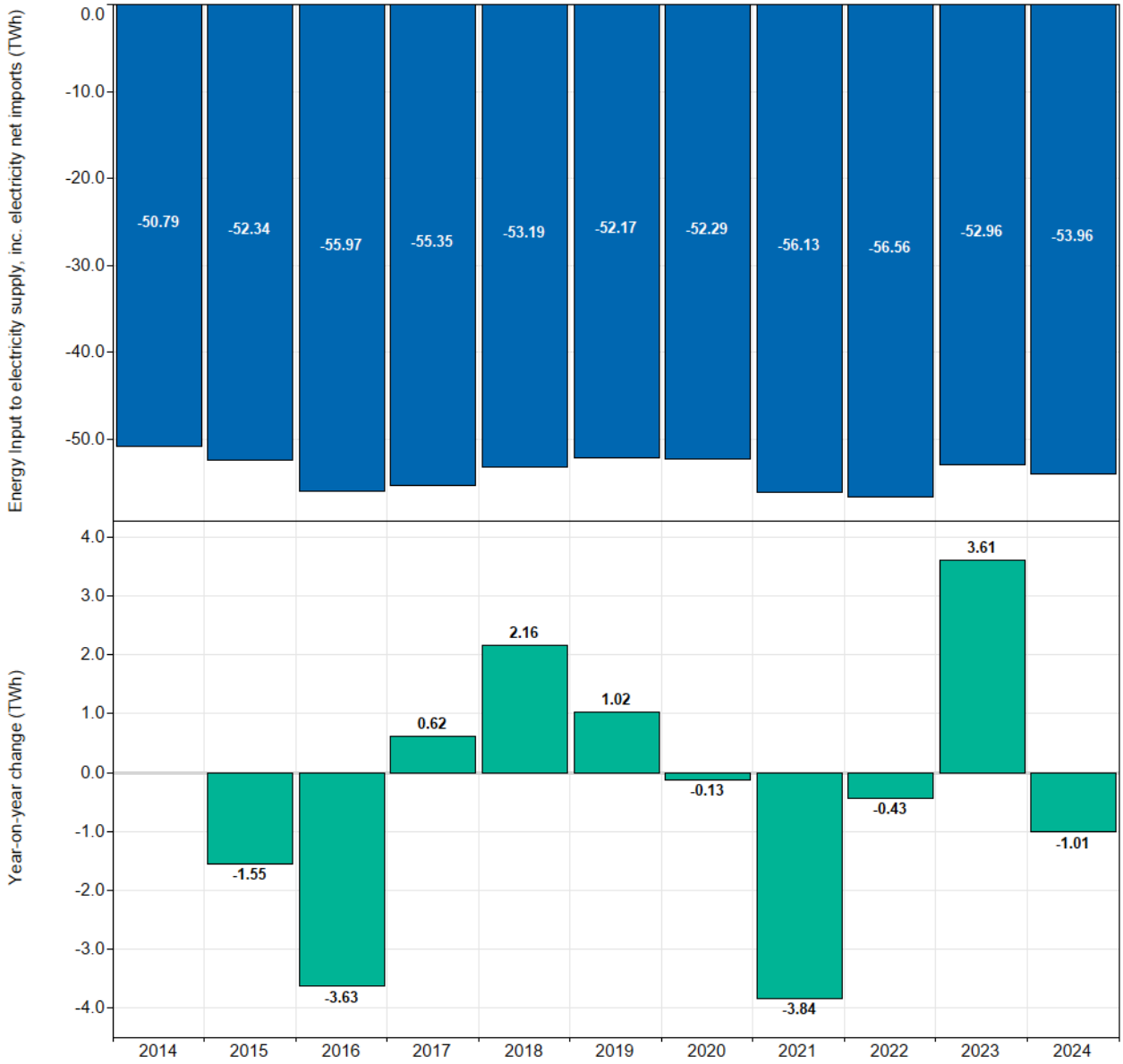
Data is collected in a range of physical (*e.g.* million cubic meters) and energy units (*e.g.* terajoules, gigawatt hours) depending on the activity and energy input type or output type and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) by SEAI using conversion factors and densities on a net calorific value basis.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.5.1 Electricity supply - total input and annual change

Figure A.5.1 (top) shows Ireland's annual energy input to electricity supply, summed across public thermal power plants (PTPP) input, combined heat and power plants (CHP) input, electricity exchange and transfers and net imports.

Figure A.5.1 (bottom) is a swing plot that shows the year-on-year changes in the annual energy input to electricity supply for the last 11-years, *i.e.* the value in 2024 is the difference between the annual energy inputs to electricity supply in 2024 *vs.* 2023.

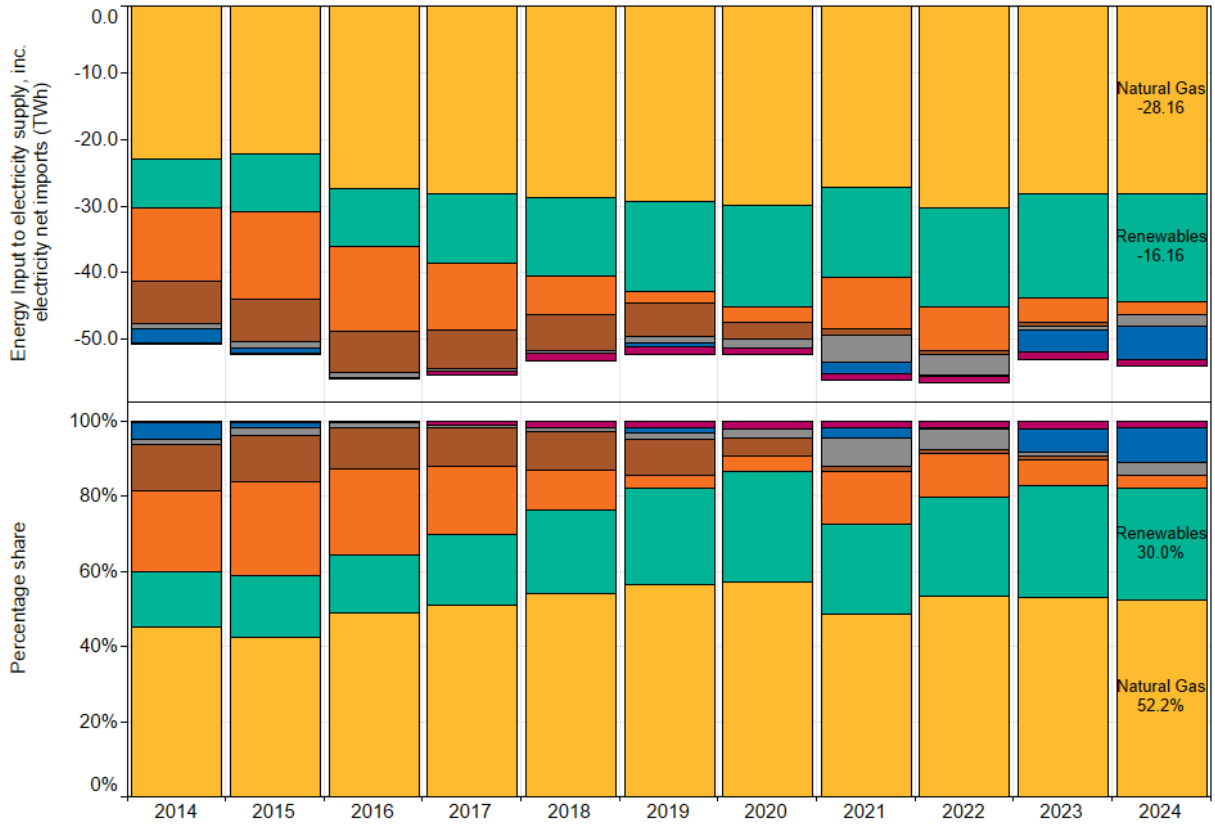


A.5.2 Electricity supply - total input by energy product

Figure A.5.2 (top) shows Ireland's annual energy input to electricity supply, summed across public thermal power plants (PTPP) input, combined heat and power plants (CHP) input, electricity exchange and transfers and net imports. Here, the energy product termed 'Electricity' refers to the net imports of electricity across international interconnectors.

Figure A.5.2 (bottom) shows the energy product breakdown displayed as a percentage of the total energy input to electricity supply each year.

The energy product marked as 'NRW' stands for *Non-Renewable Wastes*.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Natural Gas	-22.98 (45.3%)	-22.12 (42.3%)	-27.29 (48.8%)	-28.24 (51.0%)	-28.67 (53.9%)	-29.38 (56.3%)	-29.91 (57.2%)	-27.28 (48.6%)	-30.21 (53.4%)	-28.16 (53.2%)	-28.16 (52.2%)
Renewables	-7.34 (14.4%)	-8.72 (16.7%)	-8.70 (15.5%)	-10.29 (18.6%)	-11.87 (22.3%)	-13.43 (25.7%)	-15.30 (29.3%)	-13.38 (23.8%)	-14.88 (26.3%)	-15.71 (29.7%)	-16.16 (30.0%)
Coal	-10.94 (21.5%)	-13.09 (25.0%)	-12.82 (22.9%)	-10.09 (18.2%)	-5.69 (10.7%)	-1.72 (3.3%)	-2.26 (4.3%)	-7.82 (13.9%)	-6.56 (11.6%)	-3.66 (6.9%)	-1.87 (3.5%)
Peat	-6.39 (12.6%)	-6.44 (12.3%)	-6.07 (10.8%)	-5.68 (10.3%)	-5.50 (10.3%)	-5.05 (9.7%)	-2.49 (4.8%)	-0.83 (1.5%)	-0.64 (1.1%)	-0.42 (0.8%)	
Oil	-0.70 (1.4%)	-1.00 (1.9%)	-0.80 (1.4%)	-0.39 (0.7%)	-0.40 (0.8%)	-0.91 (1.7%)	-1.25 (2.4%)	-4.19 (7.5%)	-2.97 (5.3%)	-0.65 (1.2%)	-1.73 (3.2%)
Electricity	-2.15 (4.2%)	-0.67 (1.3%)				-0.64 (1.2%)		-1.59 (2.8%)	-0.25 (0.4%)	-3.28 (6.2%)	-5.06 (9.4%)
NRW	-0.29 (0.6%)	-0.29 (0.6%)	-0.29 (0.5%)	-0.66 (1.2%)	-1.06 (2.0%)	-1.03 (2.0%)	-1.08 (2.1%)	-1.04 (1.8%)	-1.05 (1.9%)	-1.09 (2.1%)	-0.97 (1.8%)
Energy input to elec. sup. (TWh, %)	**-50.79 (100.0%)**	**-52.34 (100.0%)**	**-55.97 (100.0%)**	**-55.35 (100.0%)**	**-53.19 (100.0%)**	**-52.17 (100.0%)**	**-52.29 (100.0%)**	**-56.13 (100.0%)**	**-56.56 (100.0%)**	**-52.96 (100.0%)**	**-53.96 (100.0%)**

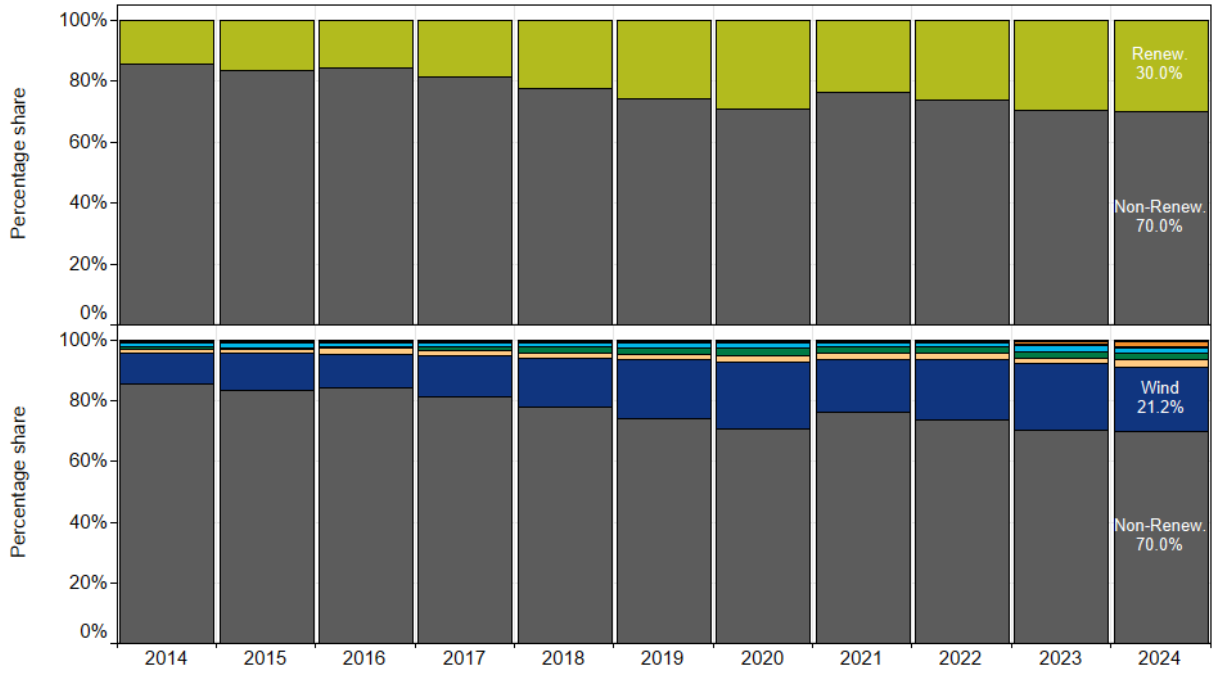
A.5.3 Electricity supply - renewable/non-renewable split of total energy input

Figure A.5.3 (top) shows Ireland's renewable/non-renewable breakdown of annual energy input to electricity supply, summed across public thermal power plants (PTPP) input, combined heat and power plants (CHP) input, electricity exchange and transfers and net imports, displayed as a percentage share.

Figure A.5.3 (bottom) shows the non-renewable/renewable energy sub-product breakdown. These are displayed as a percentage of the total energy input to electricity supply each year.

Please note that this percentage-breakdown is not one-to-one equivalent to the renewable energy share of electricity (RES-E) metric calculated under the RED II and RED III methodologies. The RES-E calculation methodology includes weightings, limits, and sustainability checks not captured in the renewable/non-renewable split of total energy input to electricity generation.

The energy sub-products marked as 'RW' and 'LF Gas' stand for *renewable wastes* and *landfill gas*, respectively.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Non-Renew.	(85.6%)	(83.3%)	(84.5%)	(81.4%)	(77.7%)	(74.3%)	(70.7%)	(76.2%)	(73.7%)	(70.3%)	(70.0%)
Renew.	(14.4%)	(16.7%)	(15.5%)	(18.6%)	(22.3%)	(25.7%)	(29.3%)	(23.8%)	(26.3%)	(29.7%)	(30.0%)
Share energy input to elec. sup (%)	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**
Non-Renew.	(85.6%)	(83.3%)	(84.5%)	(81.4%)	(77.7%)	(74.3%)	(70.7%)	(76.2%)	(73.7%)	(70.3%)	(70.0%)
Wind	(10.1%)	(12.6%)	(11.0%)	(13.5%)	(16.2%)	(19.2%)	(22.1%)	(17.4%)	(19.8%)	(22.0%)	(21.2%)
Biomass	(1.3%)	(1.0%)	(1.8%)	(1.8%)	(1.7%)	(1.7%)	(2.2%)	(2.1%)	(2.2%)	(1.8%)	(2.5%)
RW	(0.6%)	(0.6%)	(0.5%)	(1.1%)	(2.2%)	(2.1%)	(2.3%)	(2.0%)	(2.0%)	(2.1%)	(2.1%)
Hydro	(1.4%)	(1.5%)	(1.2%)	(1.2%)	(1.3%)	(1.7%)	(1.8%)	(1.3%)	(1.2%)	(1.8%)	(1.4%)
LF Gas	(0.9%)	(0.9%)	(0.8%)	(0.8%)	(0.7%)	(0.7%)	(0.7%)	(0.6%)	(0.5%)	(0.5%)	(0.5%)
Solar-PV	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.1%)	(0.1%)	(0.2%)	(0.3%)	(1.2%)	(2.0%)
Biogas	(0.1%)	(0.1%)	(0.1%)	(0.1%)	(0.2%)	(0.2%)	(0.2%)	(0.2%)	(0.2%)	(0.2%)	(0.2%)
Share energy input to elec. sup. (%)	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**	**(100.0%)**

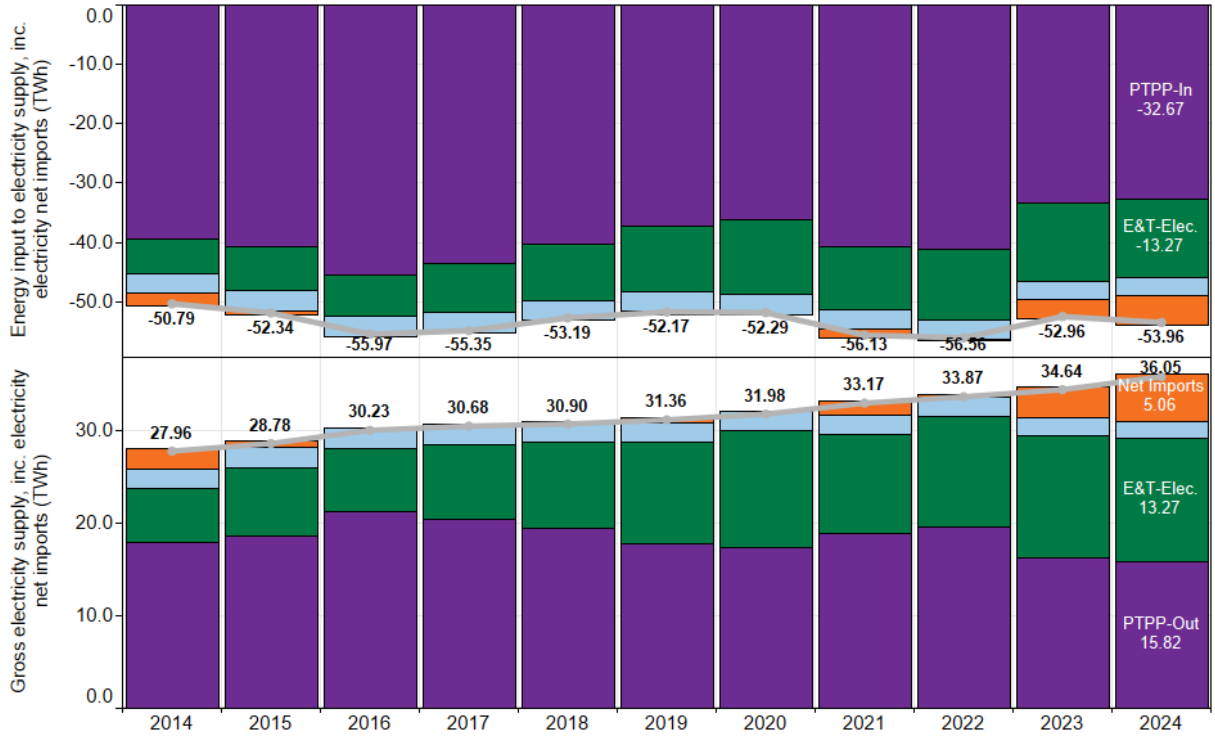
A.5.4 Electricity supply – total energy input and electricity output by stream

Figure A.5.4 (top) shows the total annual energy input to electricity supply, across all streams, *i.e.* public thermal power plants (PTPP), combined heat and power plants (CHP), electricity exchange and transfers and net imports.

Figure A.5.4 (bottom) shows the total annual electricity output from all streams, *i.e.* public thermal power plants (PTPP), combined heat and power plants (CHP), electricity exchange and transfers and net imports.

The line in both figures corresponds to the sum of the streams.

The 'E&T-Elec' values correspond to the sum of *electricity transformation* line items within the national Energy Balance that move the *energy products* of wind, solar, etc., into the *energy product* of electricity, i.e. moving 'energy from wind' into 'electricity from wind' within the Energy Balance.

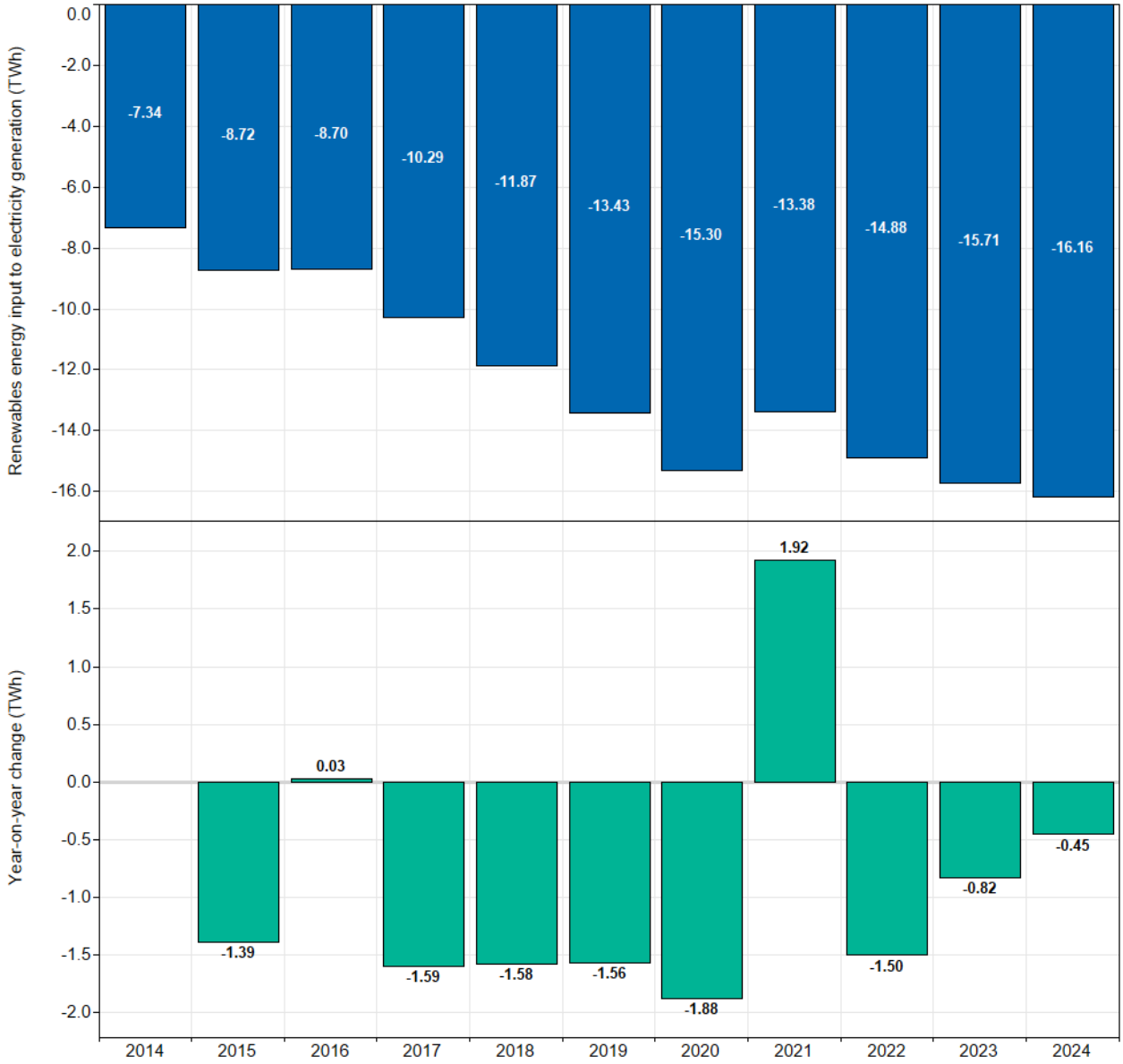


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
PTPP-In	-39.49 (77.8%)	-40.78 (77.8%)	-45.62 (81.5%)	-43.66 (78.9%)	-40.40 (76.0%)	-37.31 (71.5%)	-36.28 (69.4%)	-40.69 (72.5%)	-41.13 (72.7%)	-33.43 (63.1%)	-32.67 (60.5%)
E&T-Elec.	-5.85 (11.5%)	-7.38 (14.1%)	-6.83 (12.2%)	-8.15 (14.7%)	-9.35 (17.6%)	-10.94 (21.0%)	-12.54 (24.0%)	-10.61 (18.9%)	-12.06 (21.3%)	-13.26 (25.0%)	-13.27 (24.6%)
CHP-In	-3.29 (6.5%)	-3.55 (6.8%)	-3.51 (6.3%)	-3.54 (6.4%)	-3.43 (6.4%)	-3.26 (6.3%)	-3.48 (6.6%)	-3.24 (5.8%)	-3.12 (5.5%)	-2.99 (5.6%)	-2.96 (5.5%)
Net Imports	-2.15 (4.2%)	-0.67 (1.3%)				-0.64 (1.2%)		-1.59 (2.8%)	-0.25 (0.4%)	-3.28 (6.2%)	-5.06 (9.4%)
Energy input (TWh)	**-50.79 (100.0%)**	**-52.34 (100.0%)**	**-55.97 (100.0%)**	**-55.35 (100.0%)**	**-53.19 (100.0%)**	**-52.17 (100.0%)**	**-52.29 (100.0%)**	**-56.13 (100.0%)**	**-56.56 (100.0%)**	**-52.96 (100.0%)**	**-53.96 (100.0%)**
PTPP-Out	17.89 (64.0%)	18.57 (64.5%)	21.19 (70.1%)	20.34 (66.3%)	19.40 (62.8%)	17.69 (56.4%)	17.36 (54.3%)	18.91 (57.0%)	19.48 (57.5%)	16.19 (46.7%)	15.82 (43.9%)
E&T-Elec.	5.85 (20.9%)	7.38 (25.7%)	6.83 (22.6%)	8.15 (26.6%)	9.35 (30.3%)	10.94 (34.9%)	12.54 (39.2%)	10.61 (32.0%)	12.06 (35.6%)	13.26 (38.3%)	13.27 (36.8%)
CHP-Out	2.07 (7.4%)	2.16 (7.5%)	2.20 (7.3%)	2.19 (7.1%)	2.15 (7.0%)	2.08 (6.6%)	2.09 (6.5%)	2.06 (6.2%)	2.07 (6.1%)	1.91 (5.5%)	1.89 (5.2%)
Net Imports	2.15 (7.7%)	0.67 (2.3%)				0.64 (2.1%)		1.59 (4.8%)	0.25 (0.7%)	3.28 (9.5%)	5.06 (14.0%)
Electricity supply (TWh)	**27.96 (100.0%)**	**28.78 (100.0%)**	**30.23 (100.0%)**	**30.68 (100.0%)**	**30.90 (100.0%)**	**31.36 (100.0%)**	**31.98 (100.0%)**	**33.17 (100.0%)**	**33.87 (100.0%)**	**34.64 (100.0%)**	**36.05 (100.0%)**

A.5.5 Electricity generation - renewables input and annual change

Figure A.5.5 (top) shows Ireland's annual renewables energy input to electricity generation, summed across public thermal power plants (PTPP) input, combined heat and power plants (CHP) input and electricity exchange and transfers.

Figure A.5.5 (bottom) is a swing plot that shows the year-on-year changes in the annual renewables energy input to electricity generation for the last 11-years, *i.e.* the value in 2024 is the difference between the annual renewables energy inputs to electricity generation in 2024 *vs.* 2023.

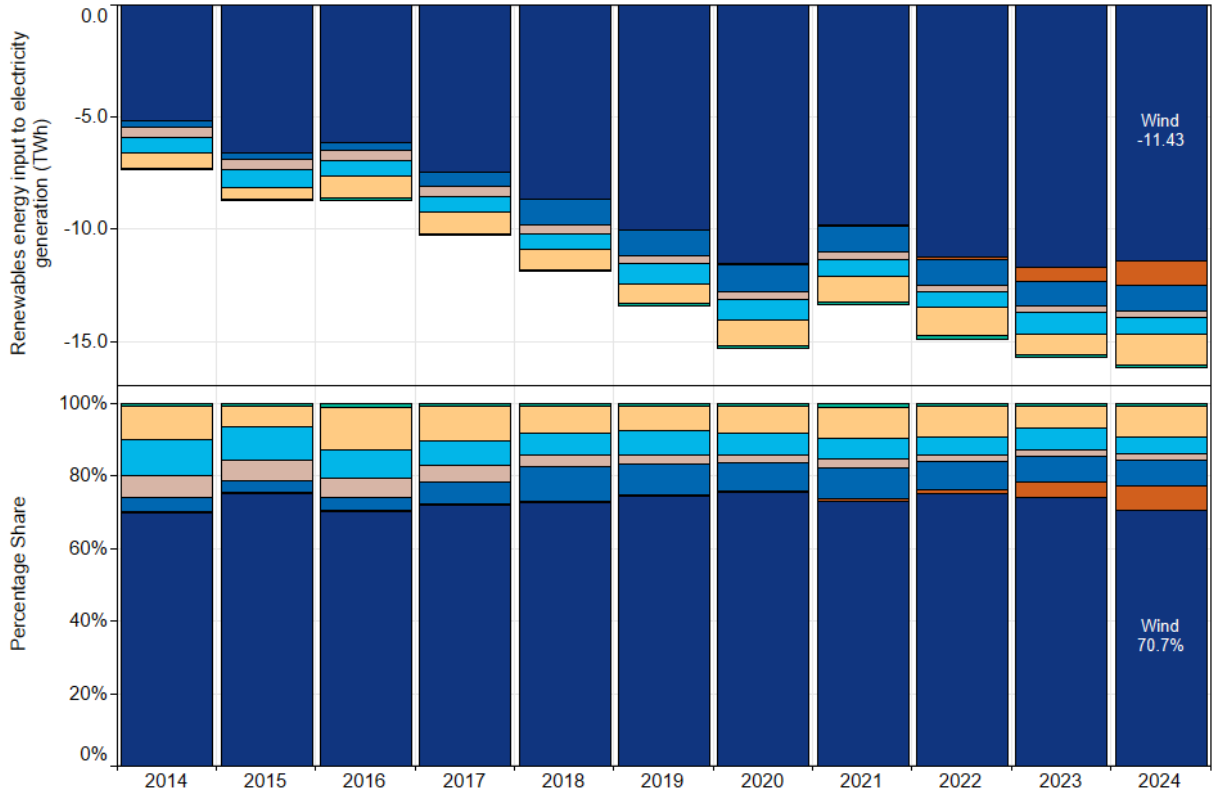


A.5.6 Electricity generation - renewables input by energy sub-product

Figure A.5.6 (top) shows Ireland's annual energy input to electricity generation from renewables, summed across public thermal power plants (PTPP) input, combined heat and power plants (CHP) input and electricity exchange and transfers.

Figure A.5.6 (bottom) shows the energy product breakdown displayed as a percentage of the total energy input to electricity generation from renewables each year.

The energy sub-products marked as 'RW' and 'LF Gas' stand for *renewable wastes* and *landfill gas*, respectively.

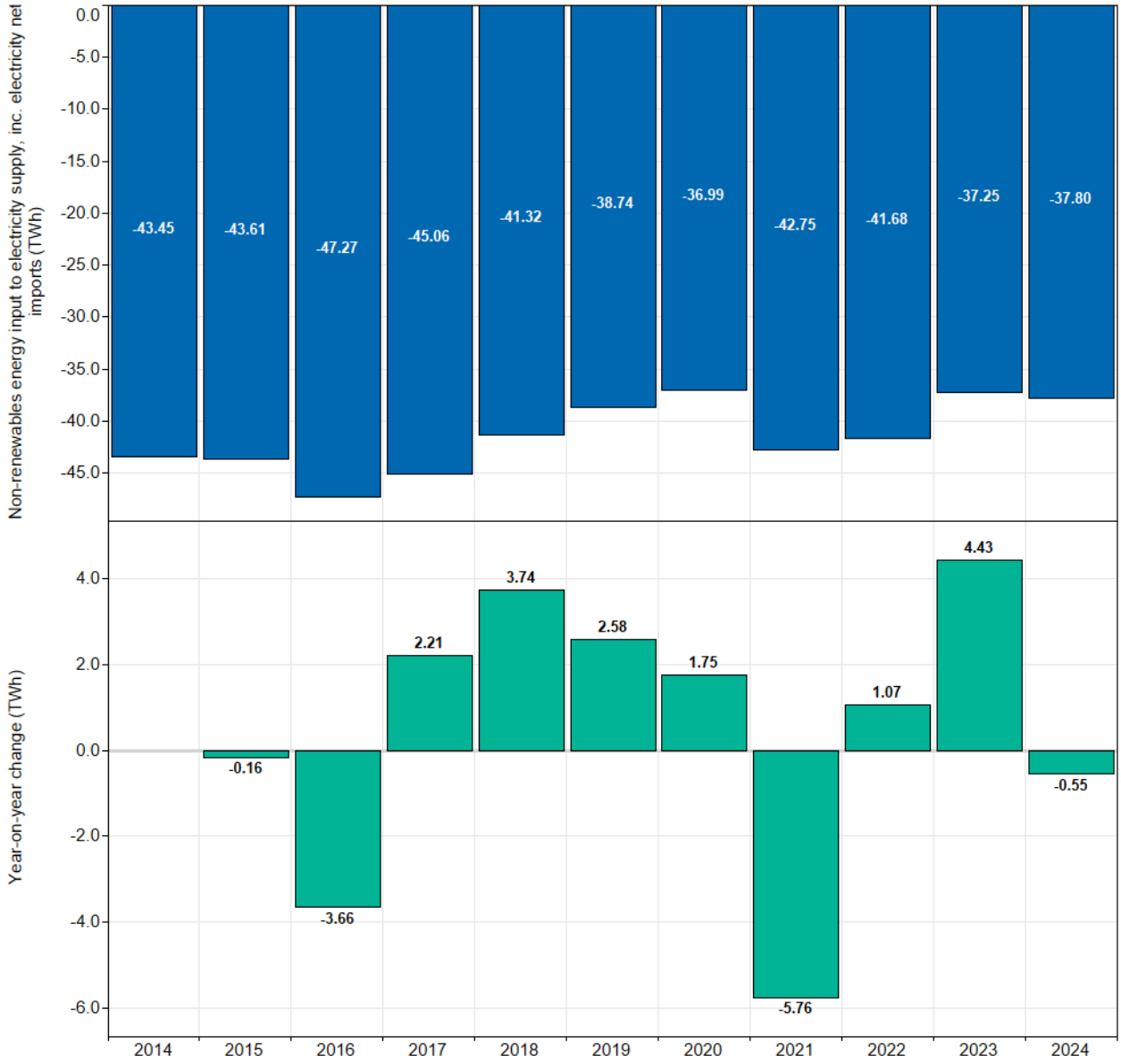


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Wind	-5.14 (70.1%)	-6.57 (75.4%)	-6.15 (70.7%)	-7.45 (72.4%)	-8.64 (72.8%)	-10.02 (74.6%)	-11.55 (75.5%)	-9.78 (73.1%)	-11.21 (75.3%)	-11.67 (74.3%)	-11.43 (70.7%)
Biomass	-0.68 (9.2%)	-0.50 (5.7%)	-1.02 (11.7%)	-0.99 (9.6%)	-0.88 (7.5%)	-0.90 (6.7%)	-1.14 (7.5%)	-1.18 (8.8%)	-1.26 (8.5%)	-0.93 (5.9%)	-1.36 (8.4%)
RW	-0.30 (4.0%)	-0.30 (3.4%)	-0.30 (3.5%)	-0.62 (6.0%)	-1.15 (9.7%)	-1.12 (8.3%)	-1.18 (7.7%)	-1.13 (8.4%)	-1.14 (7.6%)	-1.11 (7.1%)	-1.14 (7.1%)
Hydro	-0.71 (9.7%)	-0.81 (9.2%)	-0.68 (7.8%)	-0.69 (6.7%)	-0.69 (5.9%)	-0.89 (6.6%)	-0.93 (6.1%)	-0.75 (5.6%)	-0.70 (4.7%)	-0.94 (6.0%)	-0.77 (4.7%)
LF Gas	-0.45 (6.2%)	-0.49 (5.6%)	-0.46 (5.3%)	-0.45 (4.4%)	-0.39 (3.3%)	-0.37 (2.8%)	-0.34 (2.2%)	-0.34 (2.6%)	-0.30 (2.0%)	-0.28 (1.8%)	-0.27 (1.7%)
Solar-PV	0.00 (0.0%)	0.00 (0.0%)	-0.01 (0.1%)	-0.01 (0.1%)	-0.02 (0.2%)	-0.03 (0.3%)	-0.06 (0.4%)	-0.09 (0.6%)	-0.15 (1.0%)	-0.65 (4.1%)	-1.08 (6.7%)
Biogas	-0.06 (0.8%)	-0.06 (0.6%)	-0.08 (0.9%)	-0.08 (0.8%)	-0.08 (0.7%)	-0.10 (0.8%)	-0.10 (0.7%)	-0.11 (0.9%)	-0.12 (0.8%)	-0.12 (0.8%)	-0.13 (0.8%)
Ren. input to elec. gen. (TWh, %)	**-7.34 (100.0%)**	**-8.72 (100.0%)**	**-8.70 (100.0%)**	**-10.29 (100.0%)**	**-11.87 (100.0%)**	**-13.43 (100.0%)**	**-15.30 (100.0%)**	**-13.38 (100.0%)**	**-14.88 (100.0%)**	**-15.71 (100.0%)**	**-16.16 (100.0%)**

A.5.7 Electricity supply - non-renewables input and annual change

Figure A.5.7 (top) shows Ireland's annual non-renewables energy input to electricity supply, summed across public thermal power plants (PTPP) input, combined heat and power plants (CHP) input and net imports.

Figure A.5.7 (bottom) is a swing plot that shows the year-on-year changes in the annual non-renewables energy input to electricity supply for the last 11-years, *i.e.* the value in 2024 is the difference between the annual non-renewables energy inputs to electricity generation in 2024 *vs.* 2023.

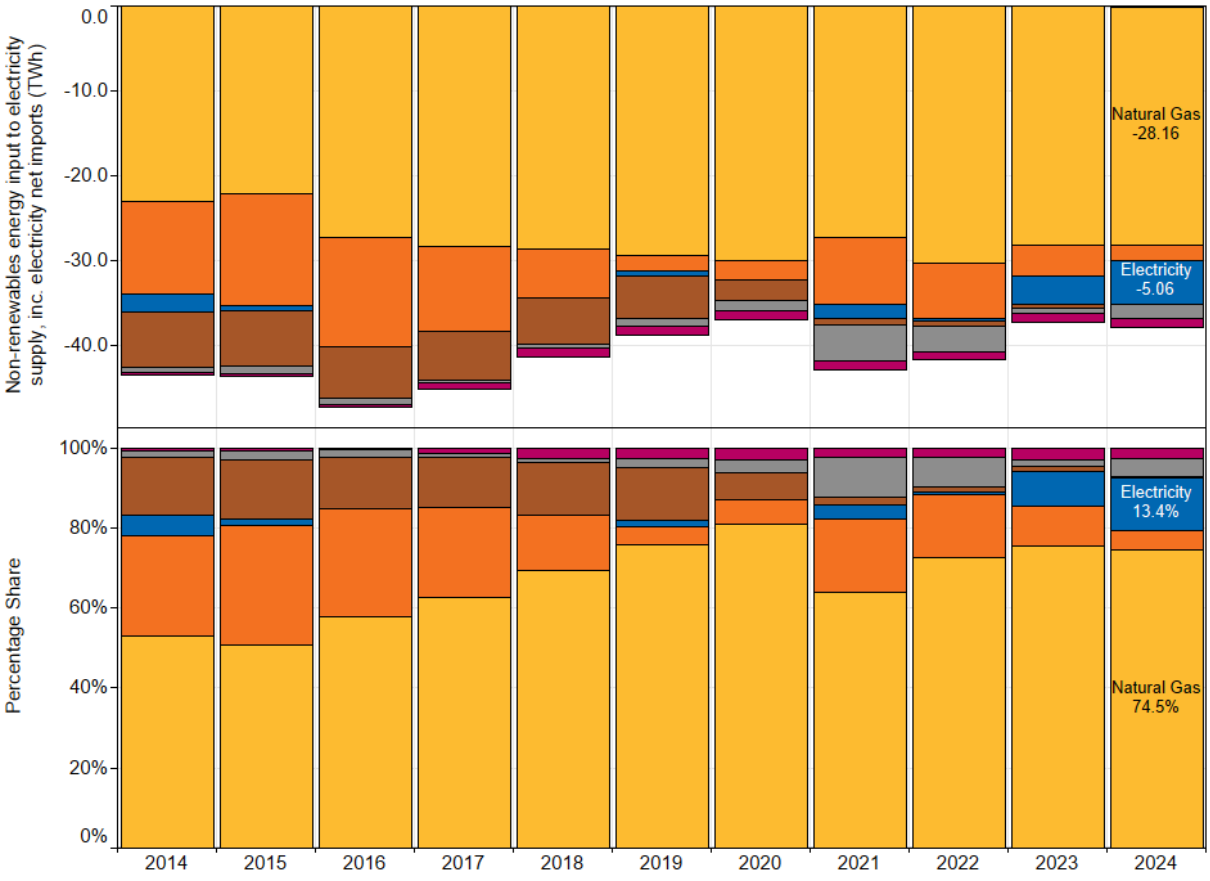


A.5.8 Electricity supply - non-renewables input by energy sub-product

Figure A.5.8 (top) shows Ireland's annual energy input to electricity supply from non-renewables, summed across public thermal power plants (PTPP) input, combined heat and power plants (CHP) input and net electricity imports. Here, the energy product termed 'Electricity' refers to the net imports of electricity across international interconnectors.

Figure A.5.8 (bottom) shows the energy product breakdown displayed as a percentage of the total energy input to electricity supply from non-renewables each year.

The energy product marked as 'NRW' stands for *Non-Renewable Wastes*.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Natural Gas	-22.98 (52.9%)	-22.12 (50.7%)	-27.29 (57.7%)	-28.24 (62.7%)	-28.67 (69.4%)	-29.38 (75.8%)	-29.91 (80.9%)	-27.28 (63.8%)	-30.21 (72.5%)	-28.16 (75.6%)	-28.16 (74.5%)
Coal	-10.94 (25.2%)	-13.09 (30.0%)	-12.82 (27.1%)	-10.09 (22.4%)	-5.69 (13.8%)	-1.72 (4.4%)	-2.26 (6.1%)	-7.82 (18.3%)	-6.56 (15.7%)	-3.66 (9.8%)	-1.87 (4.9%)
Peat	-6.39 (14.7%)	-6.44 (14.8%)	-6.07 (12.8%)	-5.68 (12.6%)	-5.50 (13.3%)	-5.05 (13.0%)	-2.49 (6.7%)	-0.83 (1.9%)	-0.64 (1.5%)	-0.42 (1.1%)	
Oil	-0.70 (1.6%)	-1.00 (2.3%)	-0.80 (1.7%)	-0.39 (0.9%)	-0.40 (1.0%)	-0.91 (2.4%)	-1.25 (3.4%)	-4.19 (9.8%)	-2.97 (7.1%)	-0.65 (1.8%)	-1.73 (4.6%)
Electricity	-2.15 (4.9%)	-0.67 (1.5%)				-0.64 (1.7%)		-1.59 (3.7%)	-0.25 (0.6%)	-3.28 (8.8%)	-5.06 (13.4%)
NRW	-0.29 (0.7%)	-0.29 (0.7%)	-0.29 (0.6%)	-0.66 (1.5%)	-1.06 (2.6%)	-1.03 (2.7%)	-1.08 (2.9%)	-1.04 (2.4%)	-1.05 (2.5%)	-1.09 (2.9%)	-0.97 (2.6%)
Non-renew. input to elec. sup. (TWh, %)	**-43.45 (100.0%)**	**-43.61 (100.0%)**	**-47.27 (100.0%)**	**-45.06 (100.0%)**	**-41.32 (100.0%)**	**-38.74 (100.0%)**	**-36.99 (100.0%)**	**-42.75 (100.0%)**	**-41.68 (100.0%)**	**-37.25 (100.0%)**	**-37.80 (100.0%)**

Appendix 6. Trends in natural gas supply

Natural gas supply data has been informed by data received from the network operator, natural gas producers and suppliers. Natural gas transformation data also includes survey responses from main activity and CHP operators and it also includes public administrative data including data from EU-ETS provided by the EPA to SEAI.

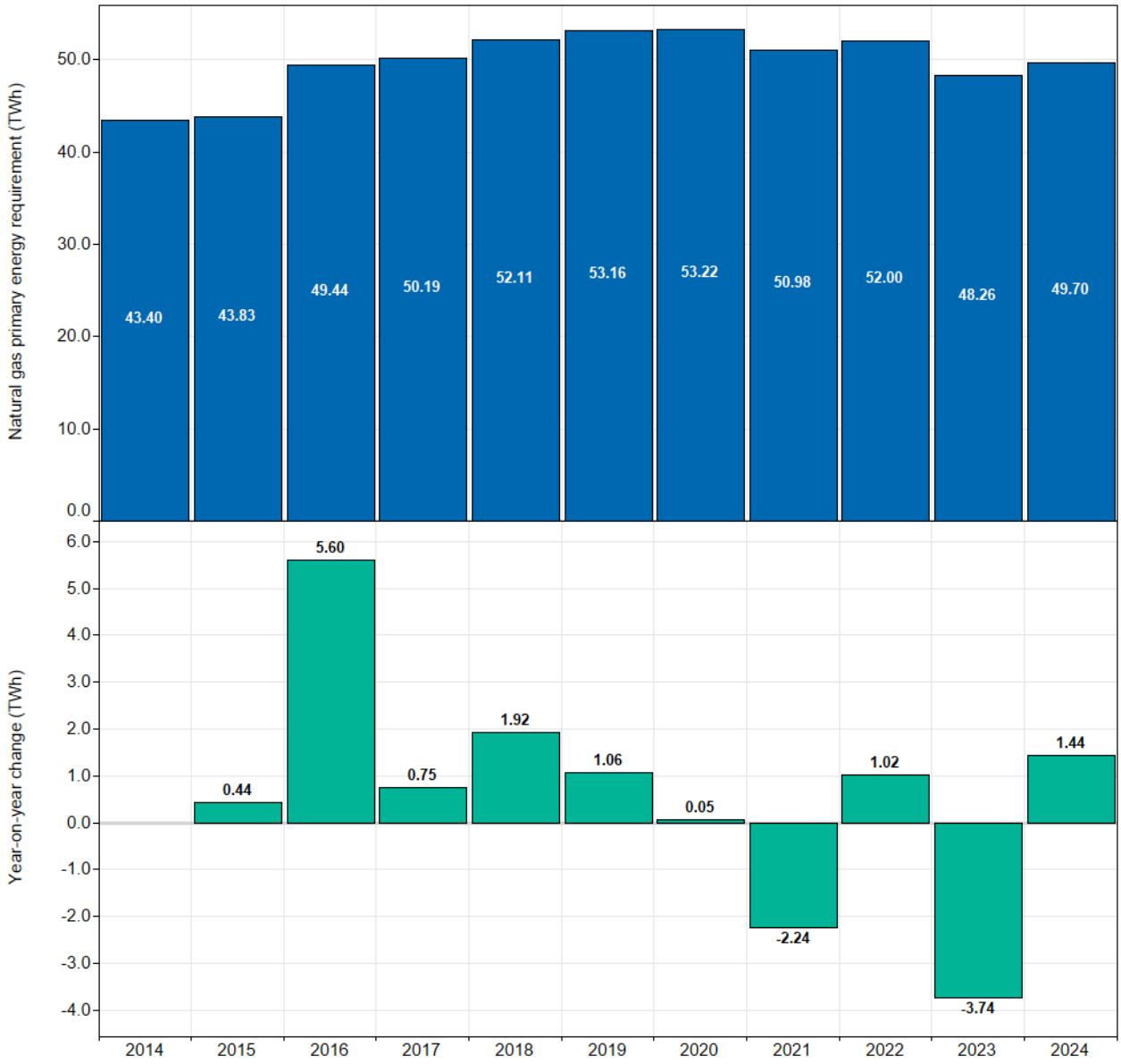
Data is collected in a range of physical (*e.g.* million cubic meters) and gross energy units (*e.g.* terajoules, gigawatt hours) depending on the activity type and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) by SEAI using conversion factors and densities on a net calorific value basis.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.6.1 Natural gas - primary energy requirement and annual change

Figure A.6.1 (top) shows Ireland's annual natural gas primary energy requirement for the last 11-years.

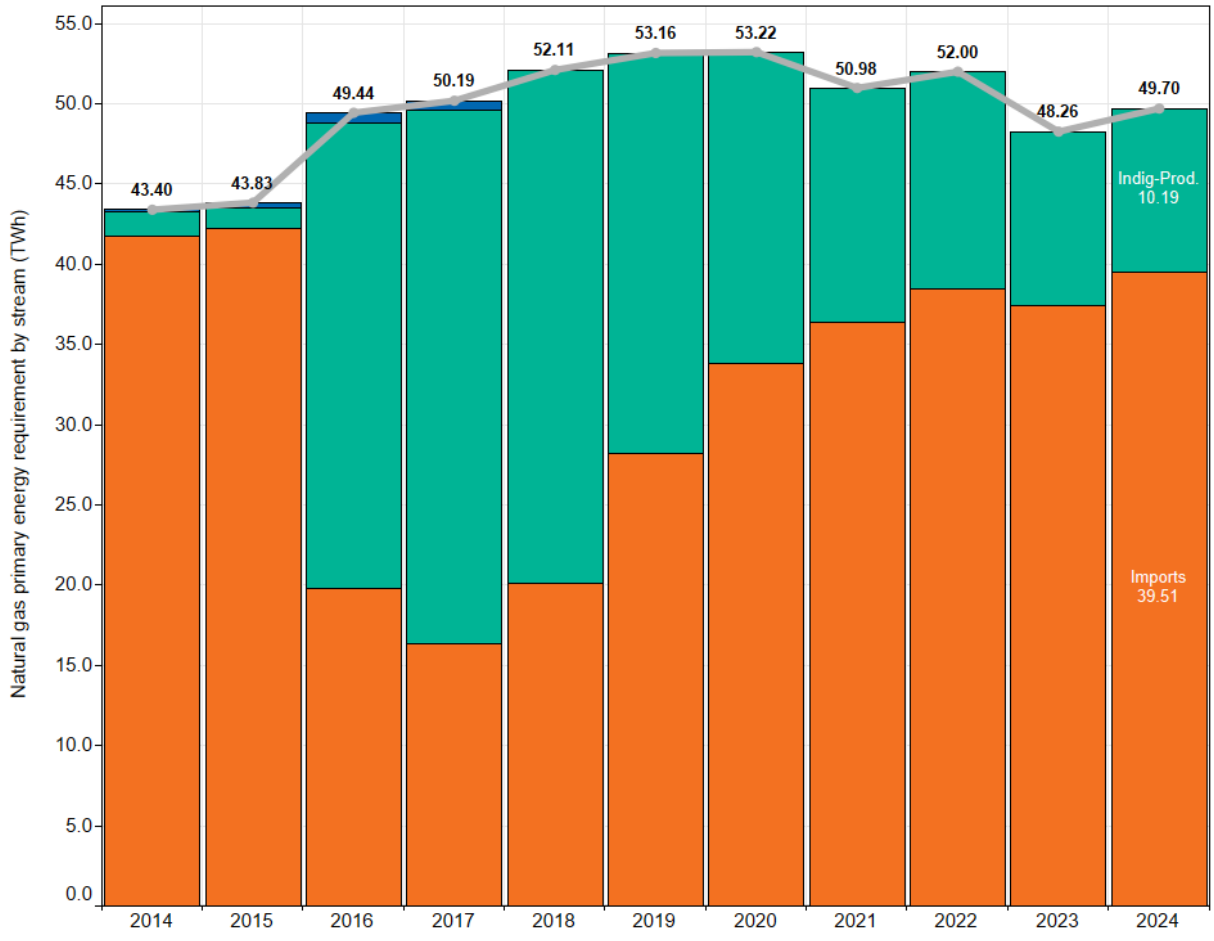
Figure A.6.1 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual natural gas primary energy requirement, *i.e.* the value in 2024 is the difference between the natural gas primary energy requirement in 2024 *vs.* 2023.



A.6.2 Natural gas - primary energy requirement by stream

Figure A.6.2 shows Ireland's annual natural gas primary energy requirement broken out by stream. The bars show the absolute energy quantity delivered or removed from natural gas primary energy requirement by each stream and the line shows the net natural gas primary energy requirement, calculated as a sum of the individual streams.

The streams marked as 'Indig-Prod.' and 'Stk Change' stand for *indigenous production*, and *stock changes*, respectively.

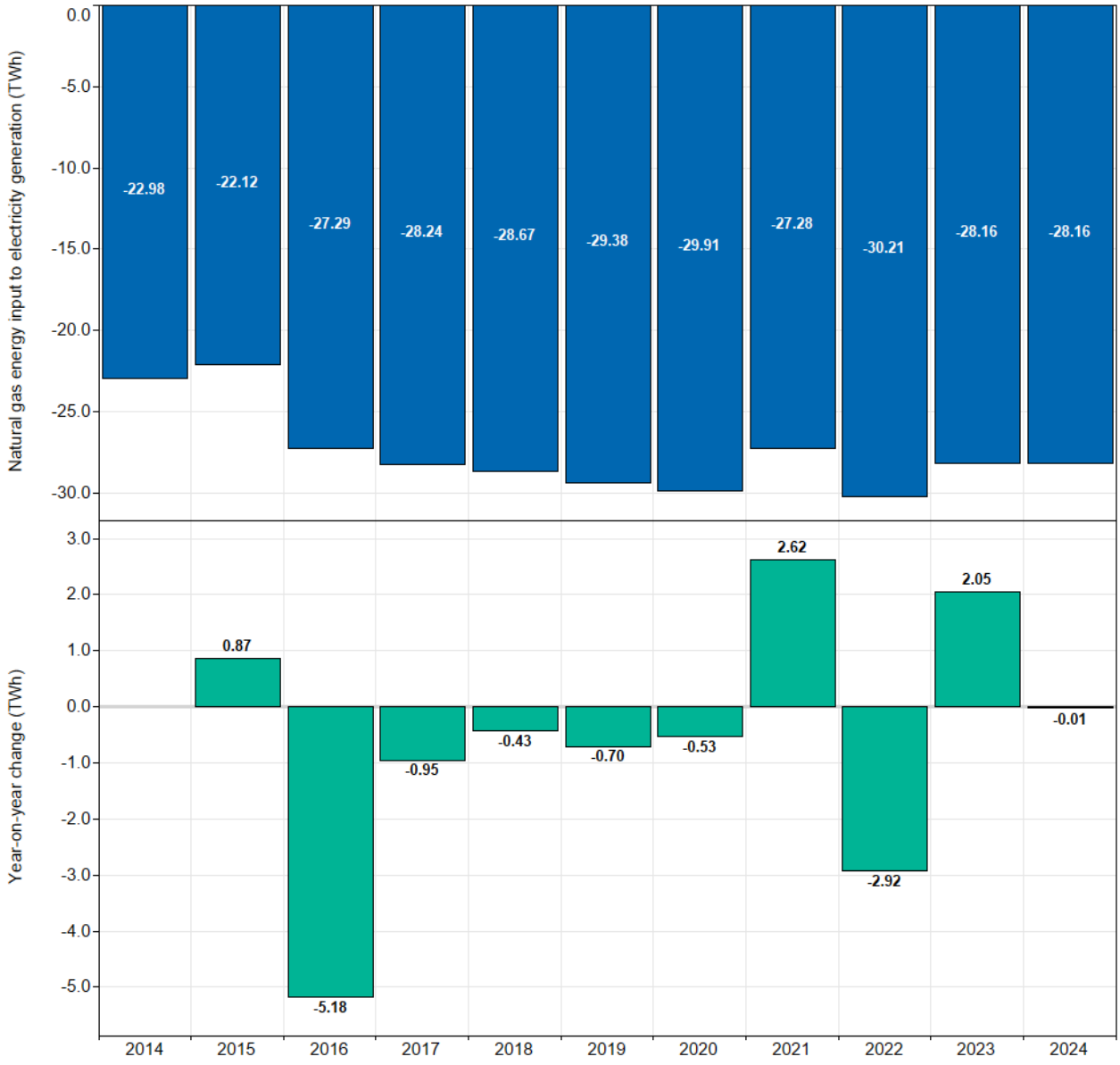


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Imports	41.75	42.20	19.82	16.38	20.10	28.20	33.84	36.35	38.45	37.39	39.51
Indig-Prod.	1.53	1.31	28.99	33.19	32.00	24.97	19.38	14.63	13.55	10.87	10.19
Stk Change	0.11	0.32	0.63	0.61							
Nat. gas PER (TWh)	**43.40**	**43.83**	**49.44**	**50.19**	**52.11**	**53.16**	**53.22**	**50.98**	**52.00**	**48.26**	**49.70**

A.6.3 Natural gas - input to electricity generation and annual change

Figure A.6.3 (top) shows Ireland's annual natural gas energy input to electricity generation, summed across public thermal power plants (PTPP) input and combined heat and power plants (CHP) input.

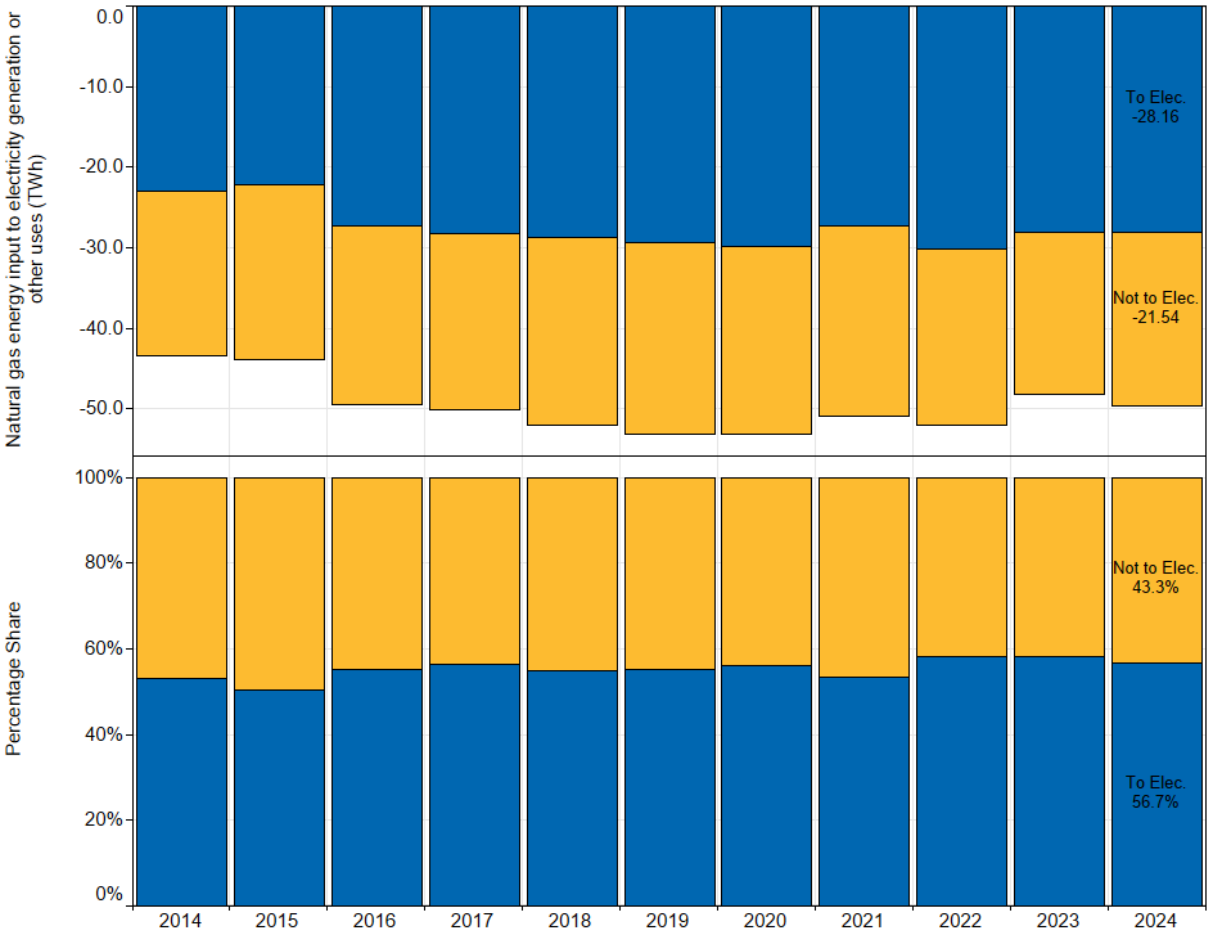
Figure A.6.3 (bottom) is a swing plot that shows the year-on-year changes in the annual natural gas energy input to electricity generation for the last 11-years, *i.e.* the value in 2024 is the difference between the annual natural gas energy input to electricity generation in 2024 *vs.* 2023.



A.6.4 Natural gas - input to electricity generation or other uses

Figure A.6.4 (top) shows Ireland's annual primary energy requirement of natural gas (summed across all relevant streams, *i.e.,* national production, imports, exports and stock change), broken out as energy input to electricity generation, or for other uses.

Figure A.6.4 (bottom) shows the percentage breakdown between natural gas energy input to electricity generation or other uses. This is displayed as a percentage of natural gas primary energy requirement each year (bottom).



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
To Elec.	-22.98 (53.0%)	-22.12 (50.5%)	-27.29 (55.2%)	-28.24 (56.3%)	-28.67 (55.0%)	-29.38 (55.8%)	-29.91 (56.2%)	-27.28 (53.5%)	-30.21 (58.1%)	-28.16 (58.3%)	-28.16 (56.7%)
Not to Elec.	-20.41 (47.0%)	-21.72 (49.5%)	-22.15 (44.8%)	-21.95 (43.7%)	-23.43 (45.0%)	-23.79 (44.7%)	-23.31 (43.8%)	-23.70 (46.5%)	-21.79 (41.9%)	-20.11 (41.7%)	-21.54 (43.3%)
Nat. gas. PER (TWh)	**-43.40 (100.0%)**	**-43.83 (100.0%)**	**-49.44 (100.0%)**	**-50.19 (100.0%)**	**-52.11 (100.0%)**	**-53.16 (100.0%)**	**-53.22 (100.0%)**	**-50.98 (100.0%)**	**-52.00 (100.0%)**	**-48.26 (100.0%)**	**-49.70 (100.0%)**

Appendix 7. Trends in oil supply

Oil supply and transformation data has been informed by the national Oil Levy Assessment (OLA) database administered by The Department of the Environment, Climate and Communications (DECC).

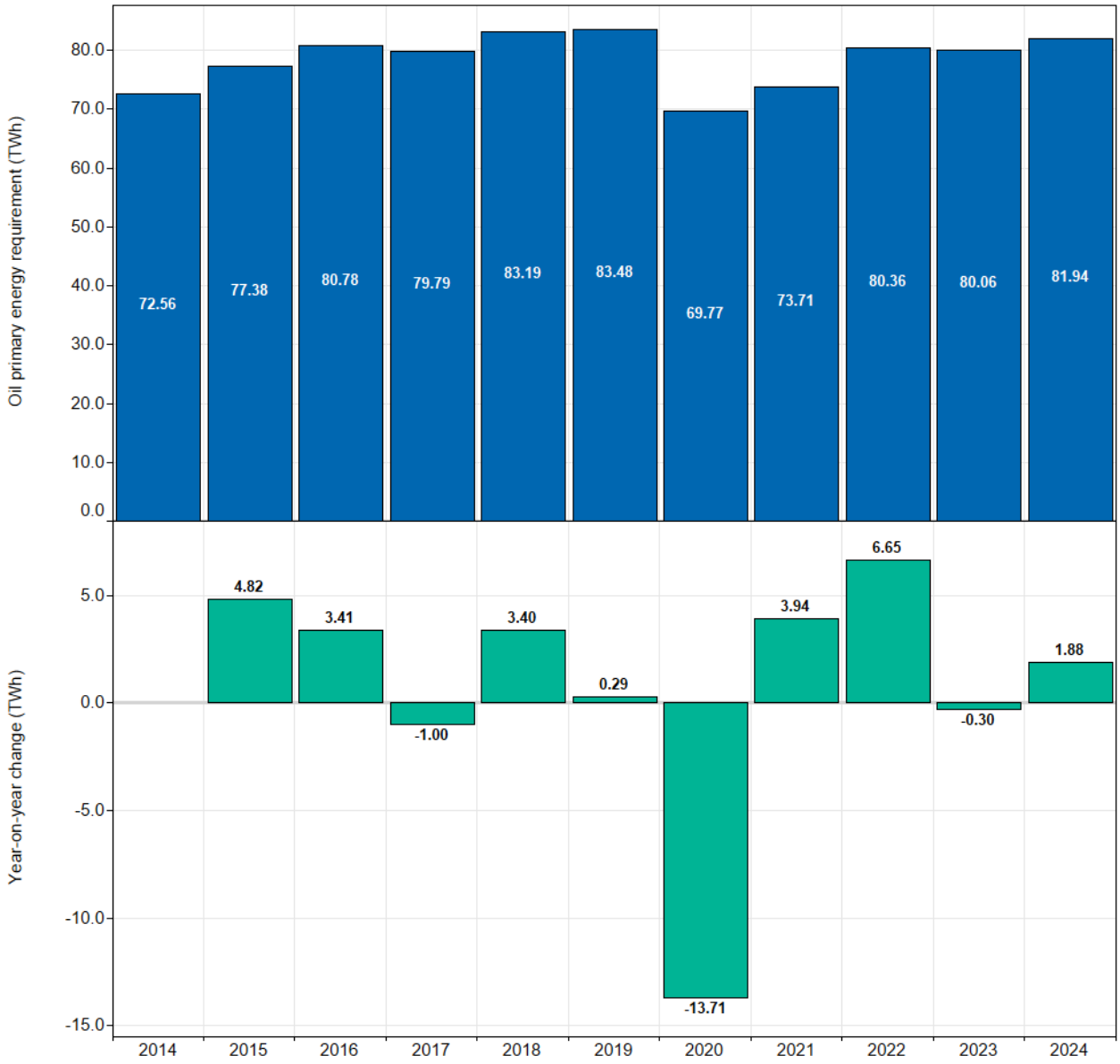
Data is collected in physical units (*i.e.* kilotonnes) and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) energy units by SEAI using conversion factors and densities on a net calorific value basis.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.7.1 Oil - primary energy requirement and annual change

Figure A.7.1 (top) shows Ireland's annual oil primary energy requirement (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*) for the last 11-years.

Figure A.7.1 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual oil primary energy requirement, *i.e.* the value in 2024 is the difference between the oil primary energy requirement in 2024 *vs.* 2023.



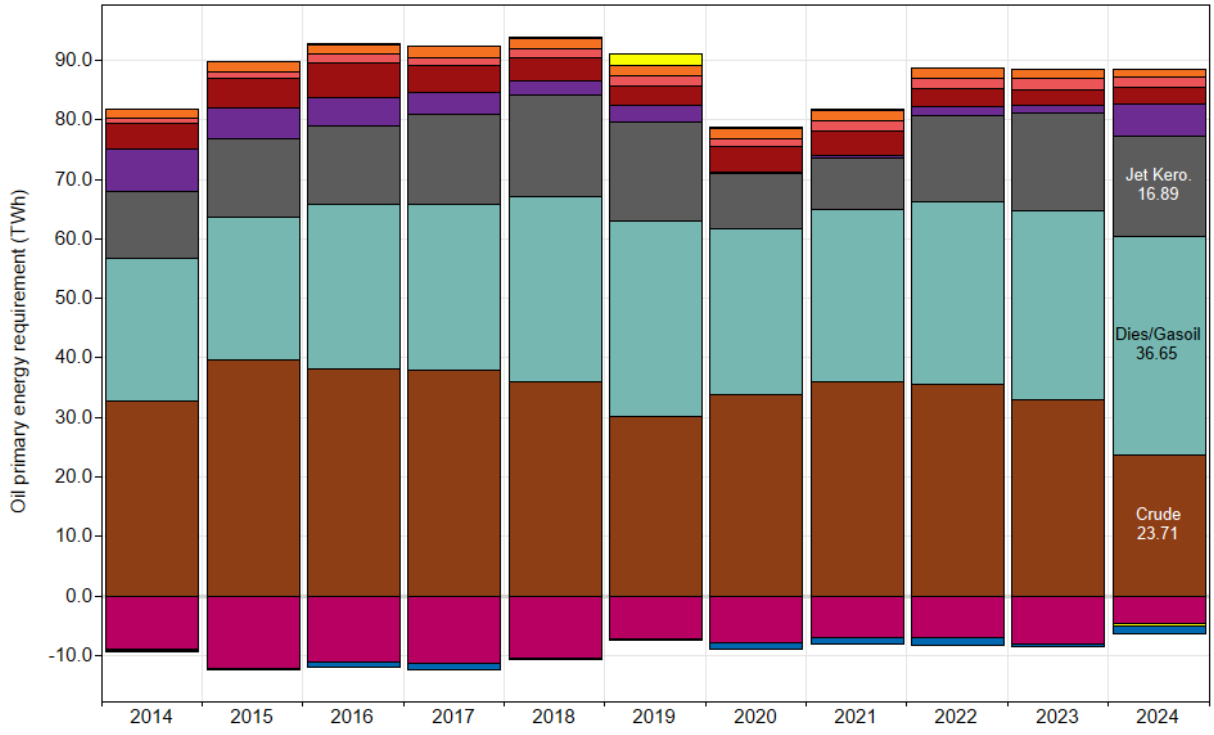
A.7.2 Oil – primary energy requirement by energy product

Figure A.7.2 (top) shows Ireland's annual oil primary energy requirement (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*), with an energy sub-product breakdown.

Figure A.7.2 (bottom) shows the energy sub-product breakdown displayed as a percentage of the total oil primary energy requirement.

Please note that the energy product 'Dies/Gasoil' is used to capture both *diesel* and *gasoil*, which are chemically very similar, and are differentiated mainly by their use and/or tax status.

The energy sub-products marked as 'Pet. Coke', 'LPG', and 'Ref. Feedstks' stand for *petroleum coke*, *liquefied petroleum gas*, and *refinery feedstocks*, respectively.



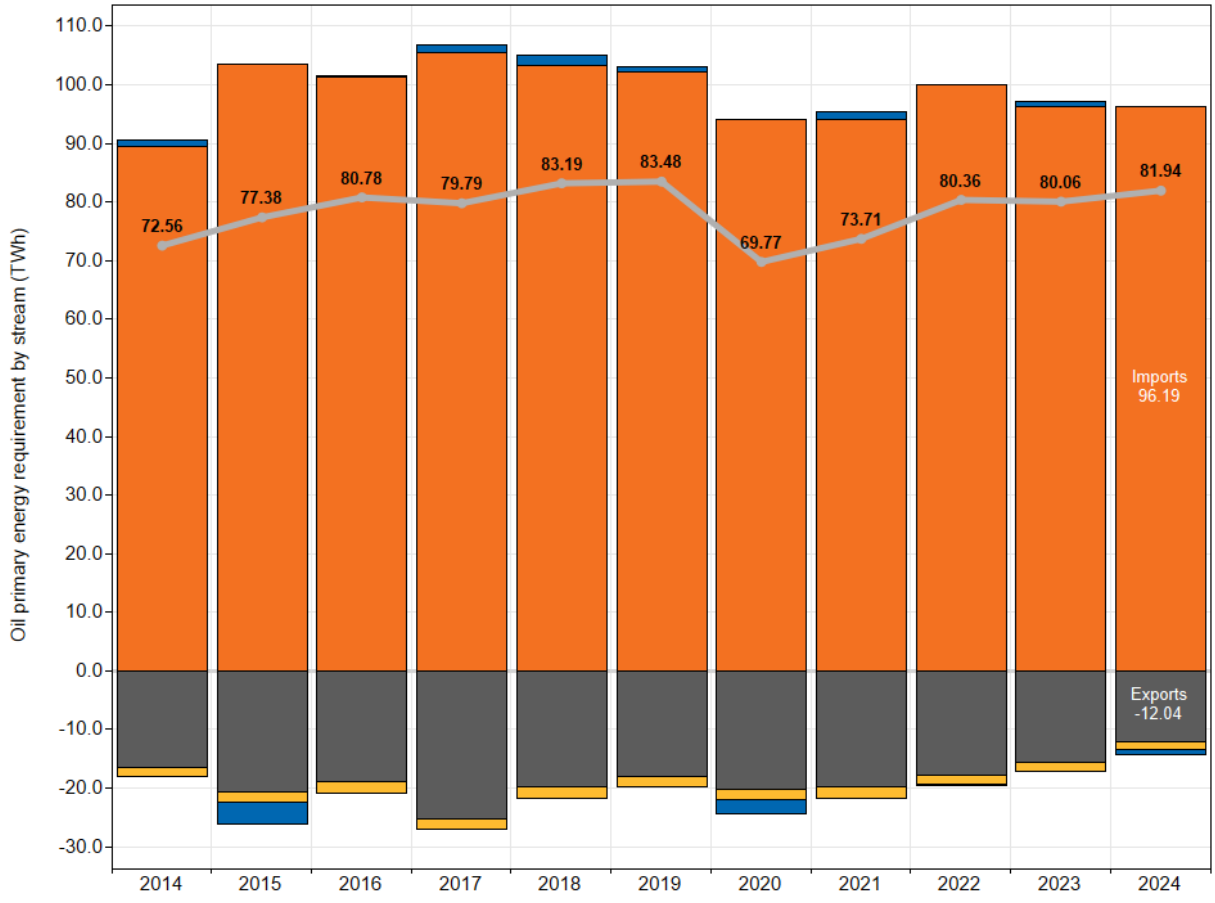
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Crude	32.69	39.71	38.06	37.82	35.96	30.10	33.75	35.97	35.47	33.03	23.71
Dies/Gasoil	24.01	23.92	27.82	28.04	31.19	32.98	28.02	28.99	30.76	31.65	36.65
Jet Kero.	11.29	13.26	13.02	15.15	17.07	16.59	9.34	8.72	14.39	16.52	16.89
Kerosene	4.34	4.89	5.95	4.47	4.03	3.22	4.30	4.16	2.98	2.48	2.90
Gasoline	7.07	5.15	4.76	3.65	2.21	2.85	0.01	0.33	1.62	1.25	5.33
Pet. Coke	1.61	1.73	1.80	1.78	1.97	1.84	1.83	2.04	1.77	1.55	1.11
LPG	0.87	1.20	1.39	1.37	1.44	1.59	1.49	1.57	1.78	2.05	1.79
Fuel Oil	-9.03	-12.13	-11.16	-11.32	-10.44	-7.14	-7.95	-7.01	-7.04	-8.12	-4.64
Naphtha	-0.19	-0.33	-0.90	-1.15	-0.34	-0.37	-1.06	-1.09	-1.35	-0.27	-1.44
Ref. Feedstks	-0.11	-0.01	0.05	-0.02	0.09	1.82	0.05	0.03	-0.02	-0.07	-0.36
Oil PER (TWh)	**72.56**	**77.38**	**80.78**	**79.79**	**83.19**	**83.48**	**69.77**	**73.71**	**80.36**	**80.06**	**81.94**

A.7.3 Oil – primary energy requirement by stream

Figure A.7.3 shows Ireland's annual oil primary energy requirement (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*) broken out by stream.

The bars show the absolute energy quantity delivered or removed from oil primary energy requirement by each stream and the line shows the net oil primary energy requirement, calculated as a sum of the individual streams.

The streams marked as 'Mar-Bunk.', and 'Stk Change' stand for *transfers to international marine bunkers*, and *stock changes*, respectively.

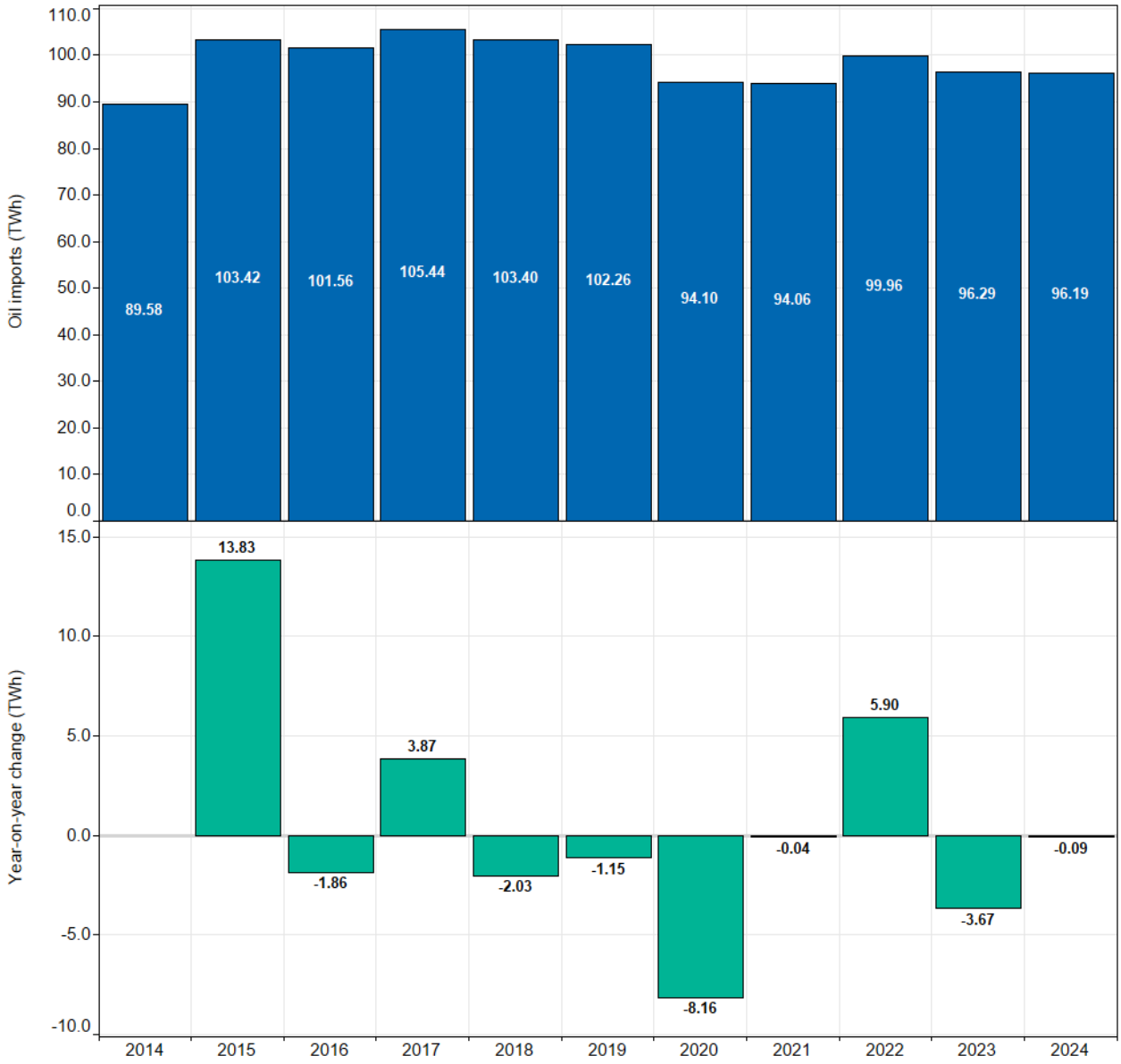


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Imports	89.58	103.42	101.56	105.44	103.40	102.26	94.10	94.06	99.96	96.29	96.19
Exports	-16.40	-20.57	-18.98	-25.31	-19.80	-18.03	-20.15	-19.70	-17.86	-15.52	-12.04
Mar-Bunk.	-1.58	-1.86	-1.86	-1.81	-2.01	-1.65	-1.80	-2.01	-1.53	-1.55	-1.35
Stk Change	0.94	-3.62	0.06	1.47	1.60	0.91	-2.37	1.37	-0.21	0.84	-0.86
Oil PER (TWh)	**72.56**	**77.38**	**80.78**	**79.79**	**83.19**	**83.48**	**69.77**	**73.71**	**80.36**	**80.06**	**81.94**

A.7.4 Oil - imports and annual change

Figure A.7.4 (top) shows Ireland's annual oil energy imports for the last 11-years summed across all oil energy sub-product types (excludes non-energy sub-products: bitumen, lubricants and white spirits).

Figure A.7.4 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual oil energy imports, *i.e.* the value in 2024 is the difference between the oil energy imports in 2024 *vs.* 2023.



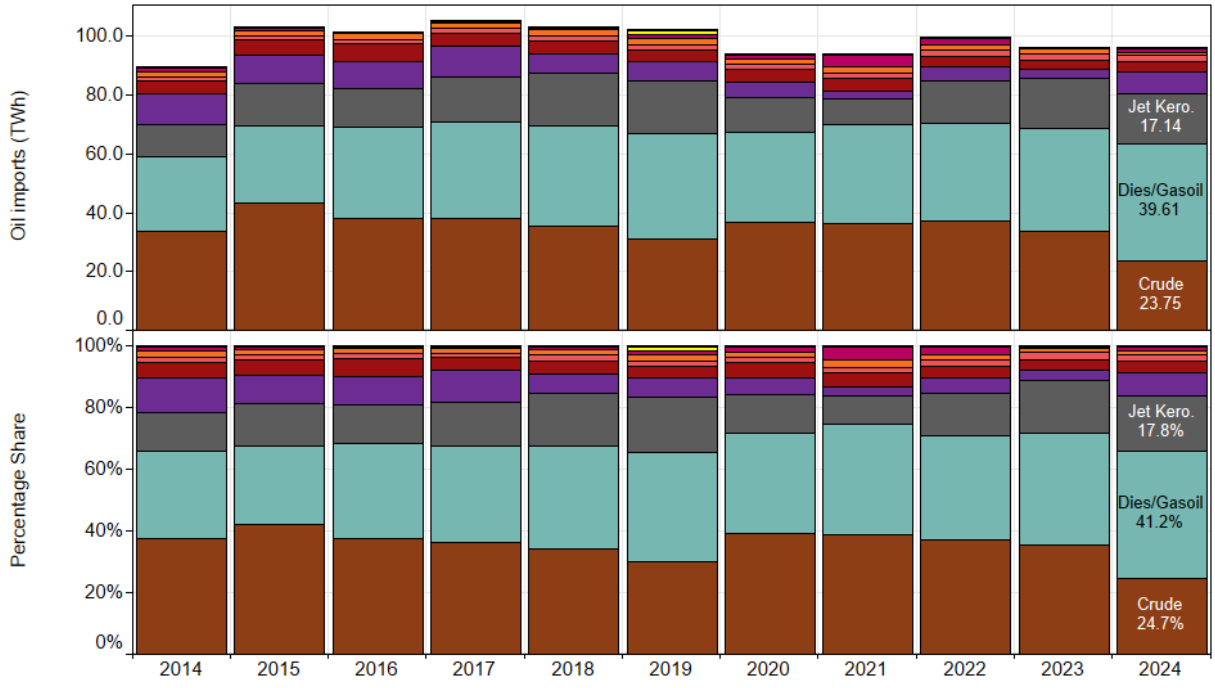
A.7.5 Oil - imports by energy sub-product

Figure A.7.5 (top) shows Ireland's total oil energy imports with an energy sub-product breakdown (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

Figure A.7.5 (bottom) shows the energy sub-product breakdown displayed as a percentage of the total oil energy imports.

Please note that the energy product 'Dies/Gasoil' is used to capture both *diesel* and *gasoil*, which are chemically very similar, and are differentiated mainly by their use and/or tax status.

The energy sub-products marked as 'Pet. Coke', 'LPG', and 'Ref. Feedstks' stand for *petroleum coke*, *liquefied petroleum gas*, and *refinery feedstocks*, respectively.

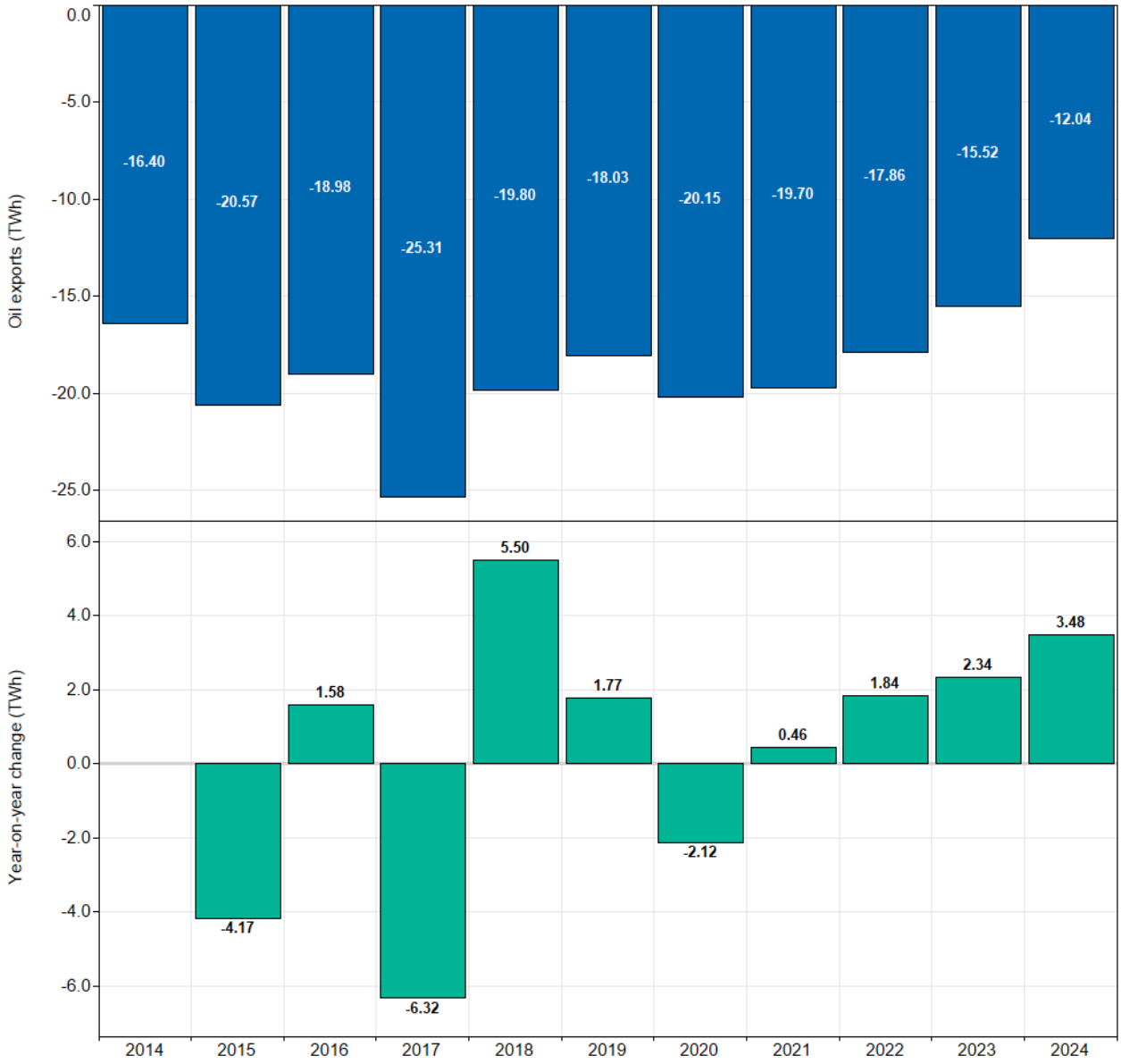


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Crude	33.54 (37.4%)	43.32 (41.9%)	38.03 (37.4%)	38.19 (36.2%)	35.51 (34.3%)	30.86 (30.2%)	36.90 (39.2%)	36.27 (38.6%)	37.20 (37.2%)	33.91 (35.2%)	23.75 (24.7%)
Dies/Gasoil	25.46 (28.4%)	26.37 (25.5%)	31.22 (30.7%)	32.78 (31.1%)	34.11 (33.0%)	35.96 (35.2%)	30.49 (32.4%)	33.90 (36.0%)	33.42 (33.4%)	34.95 (36.3%)	39.61 (41.2%)
Jet Kero.	11.01 (12.3%)	14.14 (13.7%)	13.05 (12.8%)	15.12 (14.3%)	17.94 (17.3%)	18.27 (17.9%)	11.95 (12.7%)	8.78 (9.3%)	14.08 (14.1%)	16.72 (17.4%)	17.14 (17.8%)
Gasoline	10.37 (11.6%)	9.86 (9.5%)	9.14 (9.0%)	10.80 (10.2%)	6.56 (6.3%)	6.31 (6.2%)	5.13 (5.5%)	2.42 (2.6%)	4.92 (4.9%)	3.05 (3.2%)	7.25 (7.5%)
Kerosene	4.50 (5.0%)	5.19 (5.0%)	6.05 (6.0%)	4.41 (4.2%)	4.29 (4.2%)	4.05 (4.0%)	4.39 (4.7%)	4.27 (4.5%)	3.72 (3.7%)	3.29 (3.4%)	3.71 (3.9%)
LPG	1.31 (1.5%)	1.40 (1.4%)	1.59 (1.6%)	1.68 (1.6%)	1.83 (1.8%)	1.82 (1.8%)	1.67 (1.8%)	1.90 (2.0%)	2.02 (2.0%)	2.22 (2.3%)	2.01 (2.1%)
Pet. Coke	1.85 (2.1%)	1.76 (1.7%)	1.79 (1.8%)	1.74 (1.6%)	1.93 (1.9%)	1.87 (1.8%)	1.59 (1.7%)	2.20 (2.3%)	1.71 (1.7%)	1.52 (1.6%)	1.12 (1.2%)
Fuel Oil	1.55 (1.7%)	1.38 (1.3%)	0.70 (0.7%)	0.73 (0.7%)	0.95 (0.9%)	1.28 (1.3%)	1.97 (2.1%)	4.25 (4.5%)	2.89 (2.9%)	0.64 (0.7%)	1.62 (1.7%)
Ref. Feedstks					0.19 (0.2%)	1.83 (1.8%)		0.07 (0.1%)			
Naphtha					0.09 (0.1%)						
Oil imports (TWh, %)	**89.58 (100.0%)**	**103.42 (100.0%)**	**101.56 (100.0%)**	**105.44 (100.0%)**	**103.40 (100.0%)**	**102.26 (100.0%)**	**94.10 (100.0%)**	**94.06 (100.0%)**	**99.96 (100.0%)**	**96.29 (100.0%)**	**96.19 (100.0%)**

A.7.6 Oil - exports and annual change

Figure A.7.6 (top) shows Ireland's annual oil energy exports for the last 11-years summed across all oil energy sub-product types (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

Figure A.7.6 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual oil energy exports, *i.e.* the value in 2024 is the difference between the oil energy exports in 2024 *vs.* 2023.



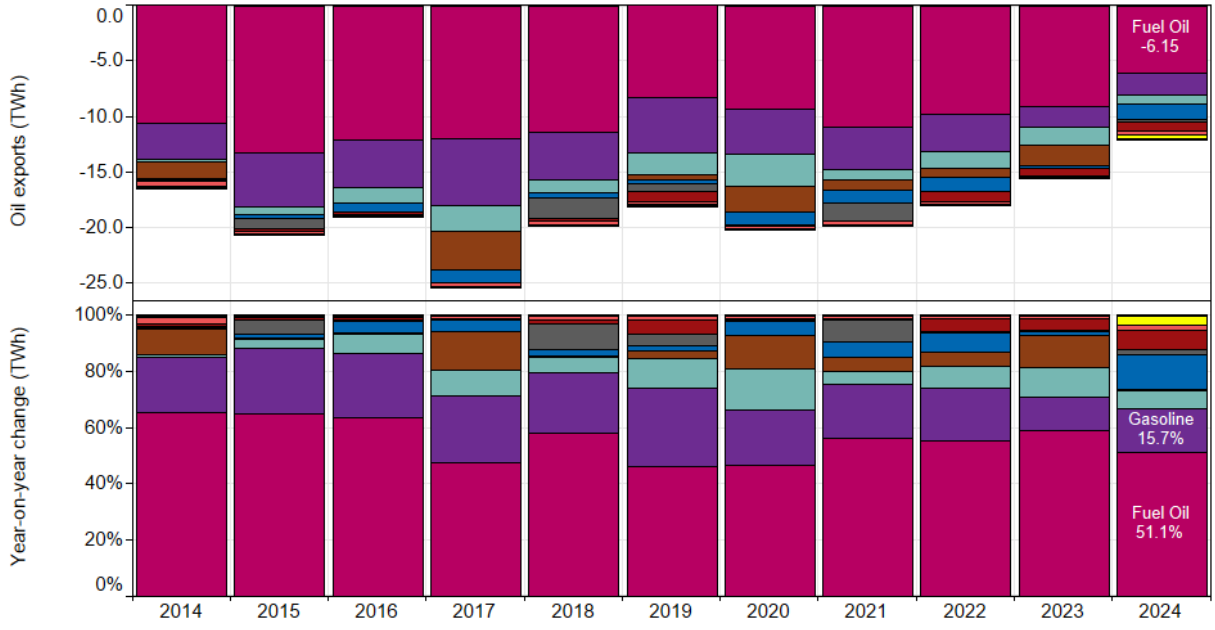
A.7.7 Oil - exports by energy sub-product

Figure A.7.7 (top) shows Ireland's total oil energy exports with an energy product breakdown (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

Figure A.7.7 (bottom) shows the energy sub-product breakdown displayed as a percentage of the total oil energy exports.

Please note that the energy product 'Dies/Gasoil' is used to capture both *diesel* and *gasoil*, which are chemically very similar, and are differentiated mainly by their use and/or tax status.

The energy sub-products marked as 'Pet. Coke', 'LPG', and 'Ref. Feedstks' stand for *petroleum coke*, *liquefied petroleum gas*, and *refinery feedstocks*, respectively.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Fuel Oil	-10.68 (65.1%)	-13.34 (64.9%)	-12.08 (63.6%)	-12.05 (47.6%)	-11.47 (57.9%)	-8.29 (46.0%)	-9.36 (46.5%)	-11.02 (55.9%)	-9.84 (55.1%)	-9.16 (59.0%)	-6.15 (51.1%)
Gasoline	-3.21 (19.6%)	-4.82 (23.4%)	-4.31 (22.7%)	-6.02 (23.8%)	-4.24 (21.4%)	-5.04 (27.9%)	-4.00 (19.9%)	-3.80 (19.3%)	-3.33 (18.6%)	-1.83 (11.8%)	-1.89 (15.7%)
Dies/Gasoil	-0.21 (1.3%)	-0.70 (3.4%)	-1.36 (7.2%)	-2.23 (8.8%)	-1.19 (6.0%)	-1.91 (10.6%)	-2.92 (14.5%)	-0.88 (4.5%)	-1.47 (8.2%)	-1.63 (10.5%)	-0.83 (6.9%)
Crude	-1.45 (8.8%)			-3.51 (13.9%)		-0.50 (2.8%)	-2.36 (11.7%)	-0.98 (5.0%)	-0.83 (4.6%)	-1.78 (11.4%)	
Naphtha	-0.19 (1.2%)	-0.31 (1.5%)	-0.88 (4.6%)	-1.19 (4.7%)	-0.42 (2.1%)	-0.33 (1.9%)	-1.11 (5.5%)	-1.12 (5.7%)	-1.34 (7.5%)	-0.26 (1.7%)	-1.44 (11.9%)
Jet Kero.	0.00 (0.0%)	-0.99 (4.8%)			-1.82 (9.2%)	-0.74 (4.1%)		-1.64 (8.3%)			-0.22 (1.9%)
Kerosene	-0.10 (0.6%)	-0.22 (1.1%)	-0.15 (0.8%)		-0.25 (1.3%)	-0.86 (4.8%)	-0.12 (0.6%)		-0.83 (4.6%)	-0.67 (4.3%)	-0.84 (6.9%)
LPG	-0.43 (2.6%)	-0.19 (0.9%)	-0.19 (1.0%)	-0.30 (1.2%)	-0.41 (2.1%)	-0.27 (1.5%)	-0.28 (1.4%)	-0.26 (1.3%)	-0.22 (1.2%)	-0.19 (1.2%)	-0.25 (2.1%)
Ref. Feedstks	-0.12 (0.7%)					-0.09 (0.5%)					-0.42 (3.5%)
Pet. Coke	0.00 (0.0%)	-0.01 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)	0.00 (0.0%)
Oil exports (TWh, %)	**-16.40 (100.0%)**	**-20.57 (100.0%)**	**-18.98 (100.0%)**	**-25.31 (100.0%)**	**-19.80 (100.0%)**	**-18.03 (100.0%)**	**-20.15 (100.0%)**	**-19.70 (100.0%)**	**-17.86 (100.0%)**	**-15.52 (100.0%)**	**-12.04 (100.0%)**

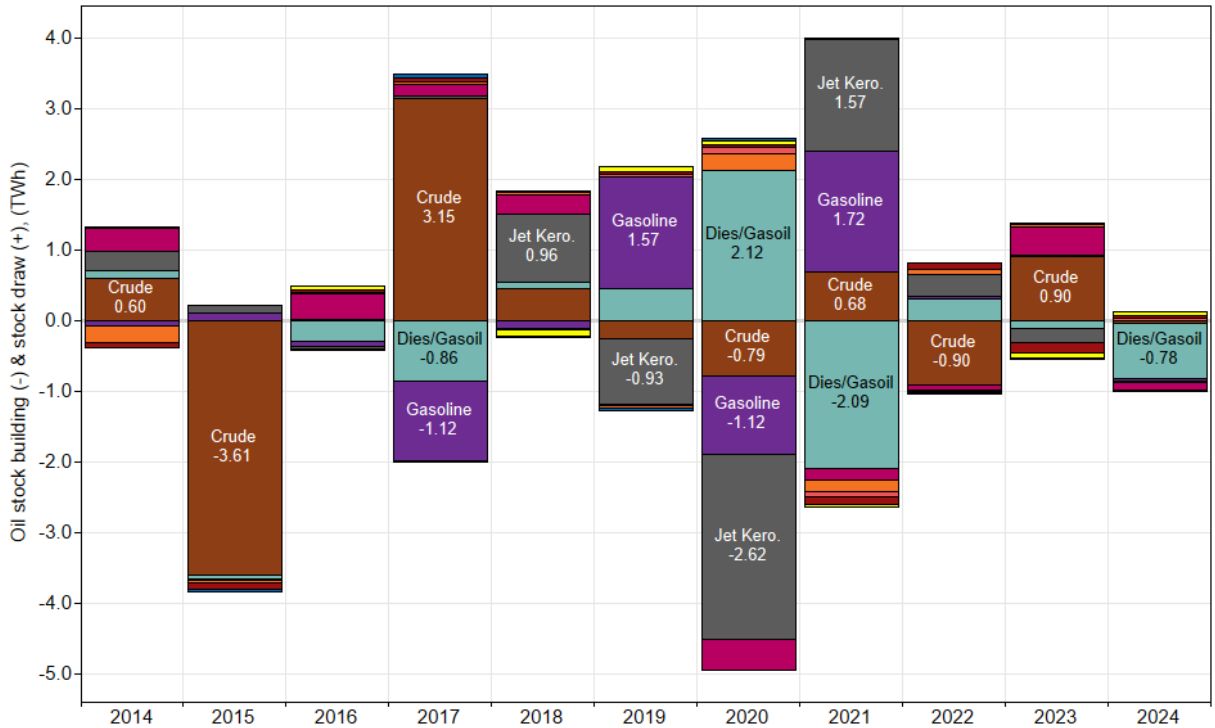
A.7.8 Oil - stock change

Figure A.7.8 shows Ireland's annual net stock change of oil energy sub-products (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

Stock building removes an energy sub-product from the primary energy supply and so presents as a negative value. In contrast, stock draw increases the amount of an energy sub-product in the primary energy supply and so presents as a positive value.

Please note that the energy product 'Dies/Gasoil' is used to capture both *diesel* and *gasoil*, which are chemically very similar, and are differentiated mainly by their use and/or tax status.

The energy sub-products marked as 'Pet. Coke', 'LPG', and 'Ref. Feedstks' stand for *petroleum coke*, *liquefied petroleum gas*, and *refinery feedstocks*, respectively.

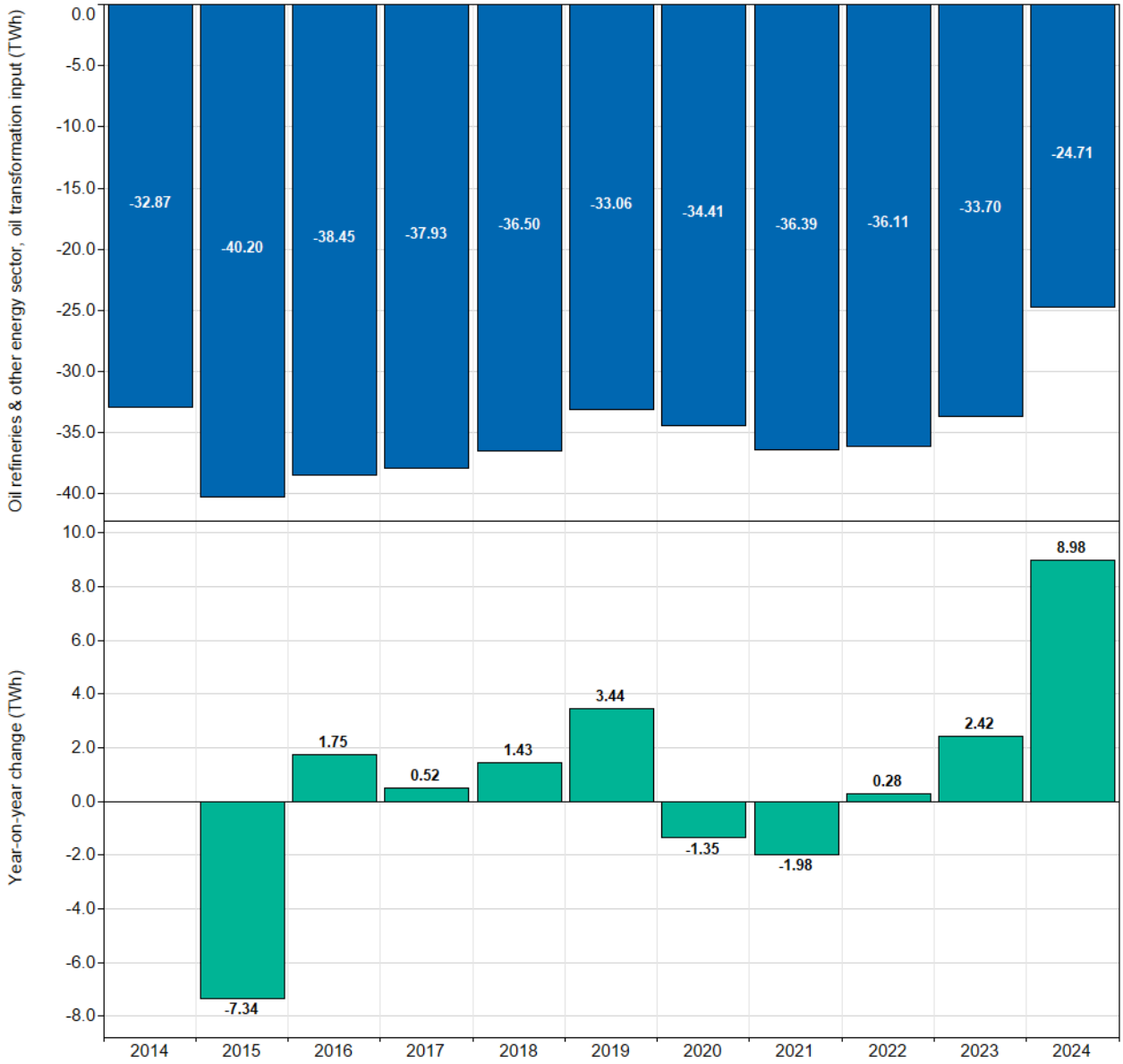


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Crude	0.60	-3.61	0.02	3.15	0.45	-0.26	-0.79	0.68	-0.90	0.90	-0.05
Jet Kero.	0.27	0.11	-0.03	0.03	0.96	-0.93	-2.62	1.57	0.32	-0.20	-0.02
Dies/Gasoil	0.10	-0.06	-0.30	-0.86	0.10	0.46	2.12	-2.09	0.31	-0.12	-0.78
Gasoline	-0.08	0.11	-0.07	-1.12	-0.11	1.57	-1.12	1.72	0.03	0.03	-0.03
Fuel Oil	0.34	-0.01	0.36	0.16	0.27	-0.01	-0.44	-0.17	-0.08	0.40	-0.11
Pet. Coke	-0.23	-0.03	0.01	0.04	0.04	-0.03	0.24	-0.15	0.06	0.04	0.00
Kerosene	-0.07	-0.08	0.05	0.06	-0.01	0.03	0.04	-0.11	0.09	-0.14	0.03
Ref. Feedstks	0.01	-0.01	0.05	-0.02	-0.10	0.08	0.05	-0.04	-0.02	-0.07	0.06
LPG	-0.01	-0.01	0.00	-0.01	0.02	0.04	0.09	-0.07	-0.02	0.02	0.03
Naphtha	0.00	-0.02	-0.02	0.04	-0.01	-0.03	0.05	0.03	0.00	-0.01	0.00
Oil stk change (TWh)	**0.94**	**-3.62**	**0.06**	**1.47**	**1.60**	**0.91**	**-2.37**	**1.37**	**-0.21**	**0.84**	**-0.86**

A.7.9 Oil - transformation input and annual change

Figure A.7.9 (top) shows Ireland's annual transformation input of oil into the oil refineries and other energy sector stream, summed across all oil energy sub-product types (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

Figure A.7.9 (bottom) is a swing plot that shows the year-on-year changes in the annual oil energy inputs to transformation in the oil refineries and other energy sector for the last 11-years, *i.e.* the value in 2024 is the difference between the annual oil energy inputs to transformation in the oil refineries and other energy sector stream in 2024 *vs.* 2023.

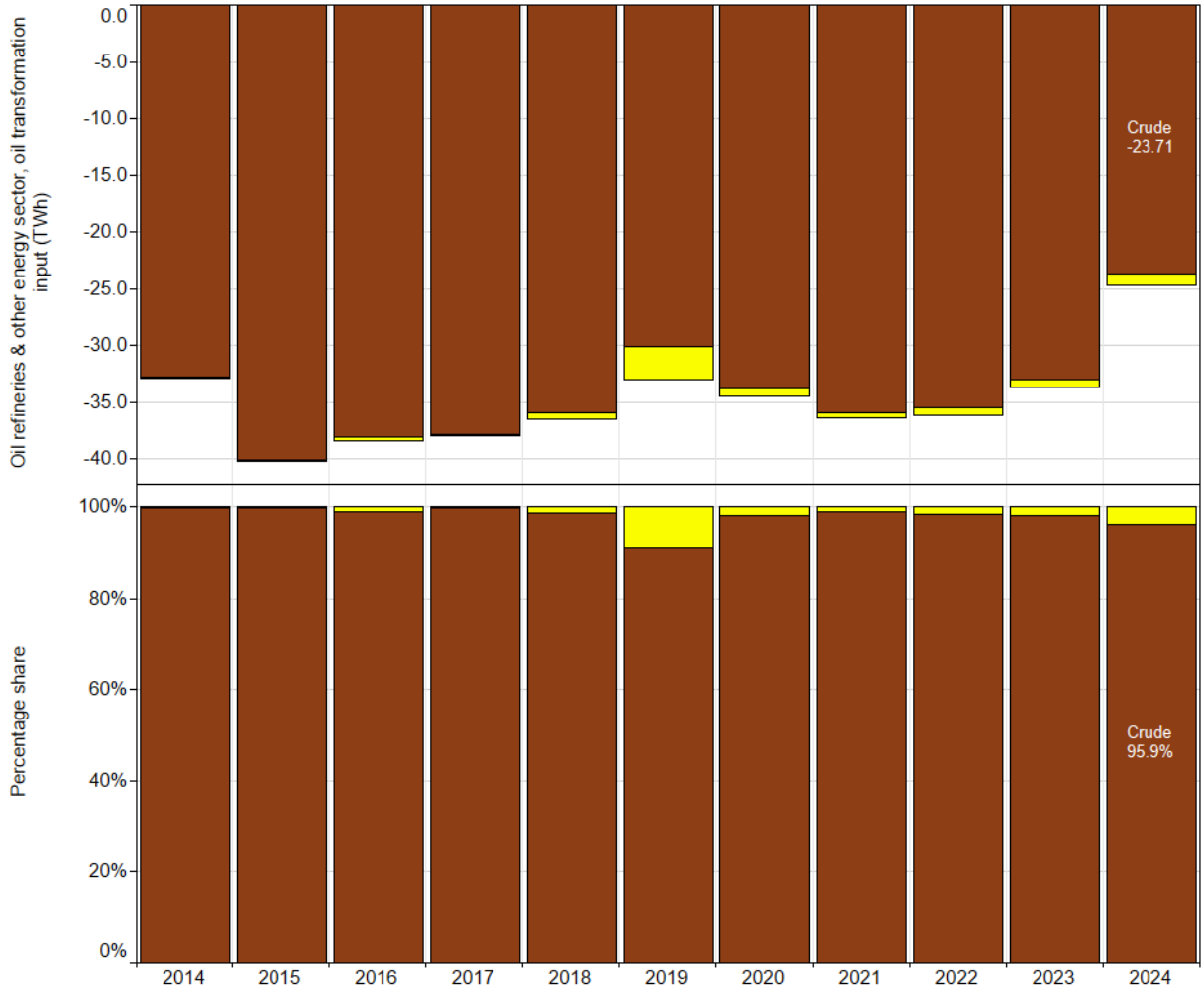


A.7.10 Oil - transformation input by energy sub-product

Figure A.7.10 (top) shows Ireland's annual transformation input of oil into the oil refineries and other energy sector stream, broken out by oil energy sub-product types (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

Figure A.7.10 (bottom) shows the energy sub-product breakdown displayed as a percentage of the total oil input to the oil refineries and other energy sector stream.

The energy sub-product marked as 'Ref. Feedstks' stands for *refinery feedstocks.*

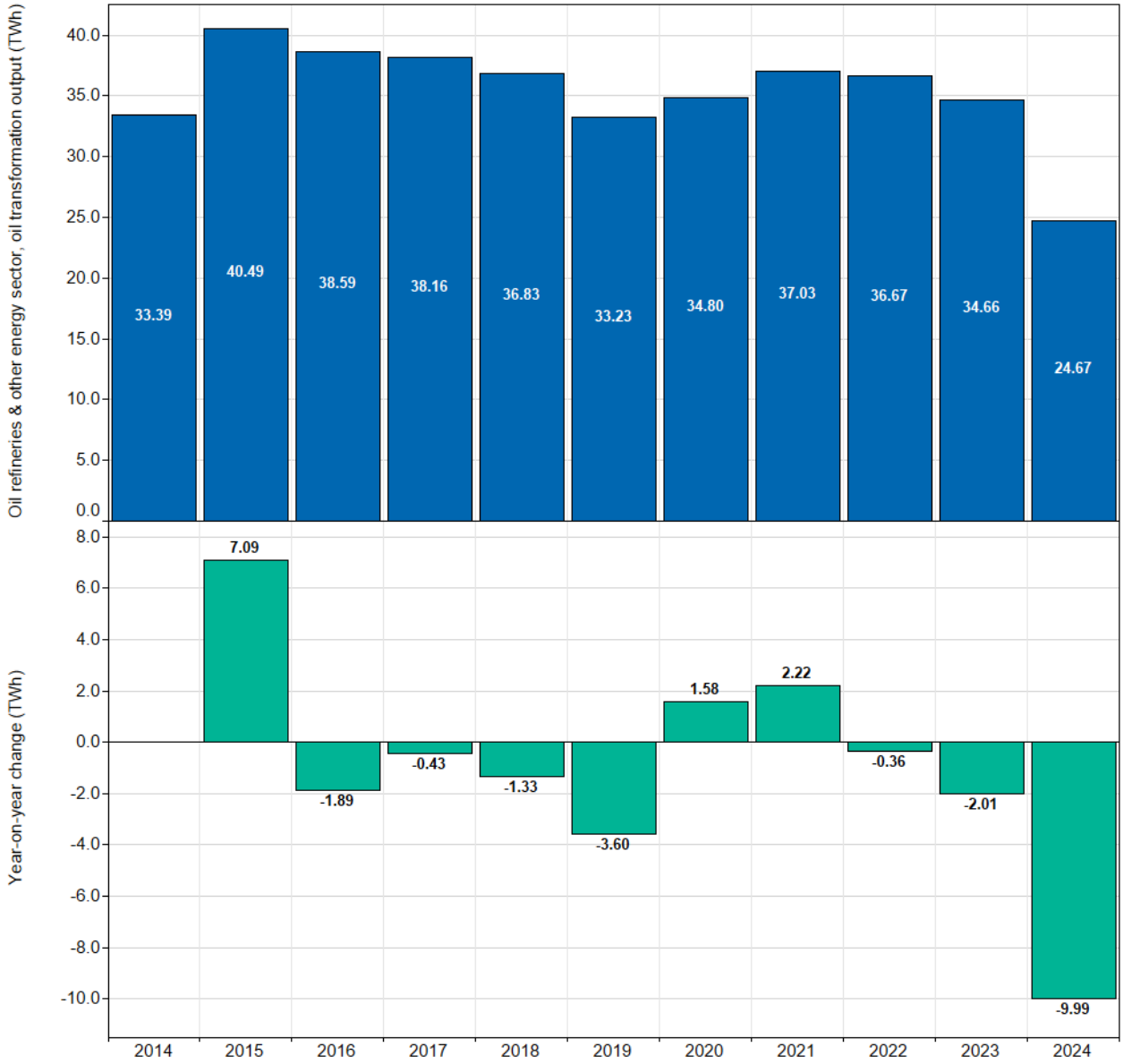


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Crude	-32.73 (99.6%)	-40.03 (99.6%)	-38.06 (99.0%)	-37.82 (99.7%)	-35.96 (98.5%)	-30.10 (91.0%)	-33.75 (98.1%)	-35.97 (98.9%)	-35.47 (98.2%)	-33.03 (98.0%)	-23.71 (95.9%)
Ref. Feedstks	-0.14 (0.4%)	-0.17 (0.4%)	-0.40 (1.0%)	-0.11 (0.3%)	-0.54 (1.5%)	-2.96 (9.0%)	-0.66 (1.9%)	-0.41 (1.1%)	-0.64 (1.8%)	-0.66 (2.0%)	-1.01 (4.1%)
Oil Ref & OES- Oil In (TWh, %)	**-32.87 (100.0%)**	**-40.20 (100.0%)**	**-38.45 (100.0%)**	**-37.93 (100.0%)**	**-36.50 (100.0%)**	**-33.06 (100.0%)**	**-34.41 (100.0%)**	**-36.39 (100.0%)**	**-36.11 (100.0%)**	**-33.70 (100.0%)**	**-24.71 (100.0%)**

A.7.11 Oil - transformation output and annual change

Figure A.7.11 (top) shows Ireland's annual transformation output of oil sub-products from the oil refineries and other energy sector stream, summed across all oil energy sub-product types (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

Figure A.7.11 (bottom) is a swing plot that shows the year-on-year changes in the annual oil energy outputs from transformation in the oil refineries and other energy sector for the last 11-years, *i.e.* the value in 2024 is the difference between the annual oil energy outputs from transformation in the oil refineries and other energy sector stream in 2024 *vs.* 2023.



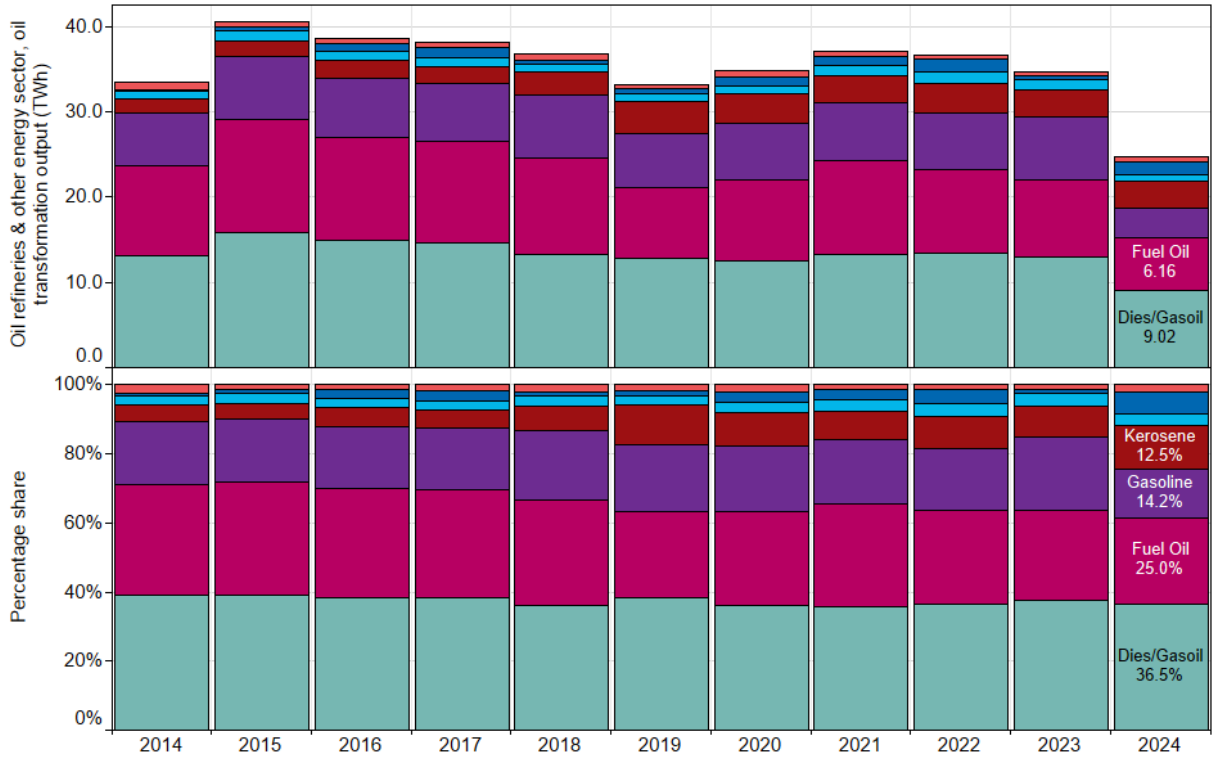
A.7.12 Oil - transformation output by energy sub-product

Figure A.7.12 (top) shows Ireland's annual oil transformation output from the oil refineries and other energy sector stream, broken out by oil energy sub-product types (excluding non-energy sub-products, *i.e.* bitumen, lubricants and white spirits, *etc.*).

Figure A.7.12 (bottom) shows the energy sub-product breakdown displayed as a percentage of the total oil output from the oil refineries and other energy sector stream.

Please note that the energy product 'Dies/Gasoil' is used to capture both *diesel* and *gasoil*, which are chemically very similar, and are differentiated mainly by their use and/or tax status.

The energy sub-product marked as 'Ref. Gas' stands for *refinery gas.*



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Dies/Gasoil	13.06 (39.1%)	15.76 (38.9%)	14.86 (38.5%)	14.62 (38.3%)	13.34 (36.2%)	12.77 (38.4%)	12.54 (36.0%)	13.20 (35.7%)	13.44 (36.6%)	13.03 (37.6%)	9.02 (36.5%)
Fuel Oil	10.68 (32.0%)	13.28 (32.8%)	12.17 (31.5%)	11.93 (31.3%)	11.18 (30.3%)	8.30 (25.0%)	9.44 (27.1%)	11.12 (30.0%)	9.85 (26.9%)	9.00 (26.0%)	6.16 (25.0%)
Gasoline	6.09 (18.2%)	7.49 (18.5%)	6.86 (17.8%)	6.83 (17.9%)	7.45 (20.2%)	6.42 (19.3%)	6.65 (19.1%)	6.80 (18.4%)	6.62 (18.1%)	7.38 (21.3%)	3.51 (14.2%)
Kerosene	1.68 (5.0%)	1.75 (4.3%)	2.15 (5.6%)	1.94 (5.1%)	2.64 (7.2%)	3.76 (11.3%)	3.41 (9.8%)	3.13 (8.4%)	3.43 (9.4%)	3.17 (9.1%)	3.09 (12.5%)
Ref. Gas	0.86 (2.6%)	1.24 (3.1%)	1.07 (2.8%)	1.05 (2.7%)	1.05 (2.8%)	0.88 (2.6%)	0.99 (2.8%)	1.13 (3.1%)	1.37 (3.7%)	1.24 (3.6%)	0.79 (3.2%)
Naphtha	0.24 (0.7%)	0.35 (0.9%)	0.93 (2.4%)	1.15 (3.0%)	0.43 (1.2%)	0.51 (1.5%)	1.09 (3.1%)	1.09 (2.9%)	1.47 (4.0%)	0.37 (1.1%)	1.59 (6.5%)
LPG	0.78 (2.3%)	0.61 (1.5%)	0.56 (1.4%)	0.64 (1.7%)	0.75 (2.0%)	0.59 (1.8%)	0.68 (2.0%)	0.55 (1.5%)	0.49 (1.3%)	0.48 (1.4%)	0.51 (2.1%)
Oil Ref & OES-Oil Out (TWh, %)	33.39 (100.0%)	40.49 (100.0%)	38.59 (100.0%)	38.16 (100.0%)	36.83 (100.0%)	33.23 (100.0%)	34.80 (100.0%)	37.03 (100.0%)	36.67 (100.0%)	34.66 (100.0%)	24.67 (100.0%)

Appendix 8. Trends in coal supply

Coal supply and transformation data has been informed by survey responses received from import/export companies and energy supply companies. It also includes data from multiple public administration datasets including EU-ETS provided by the EPA to SEAI and aggregated excise data from the Revenue Commissioners.

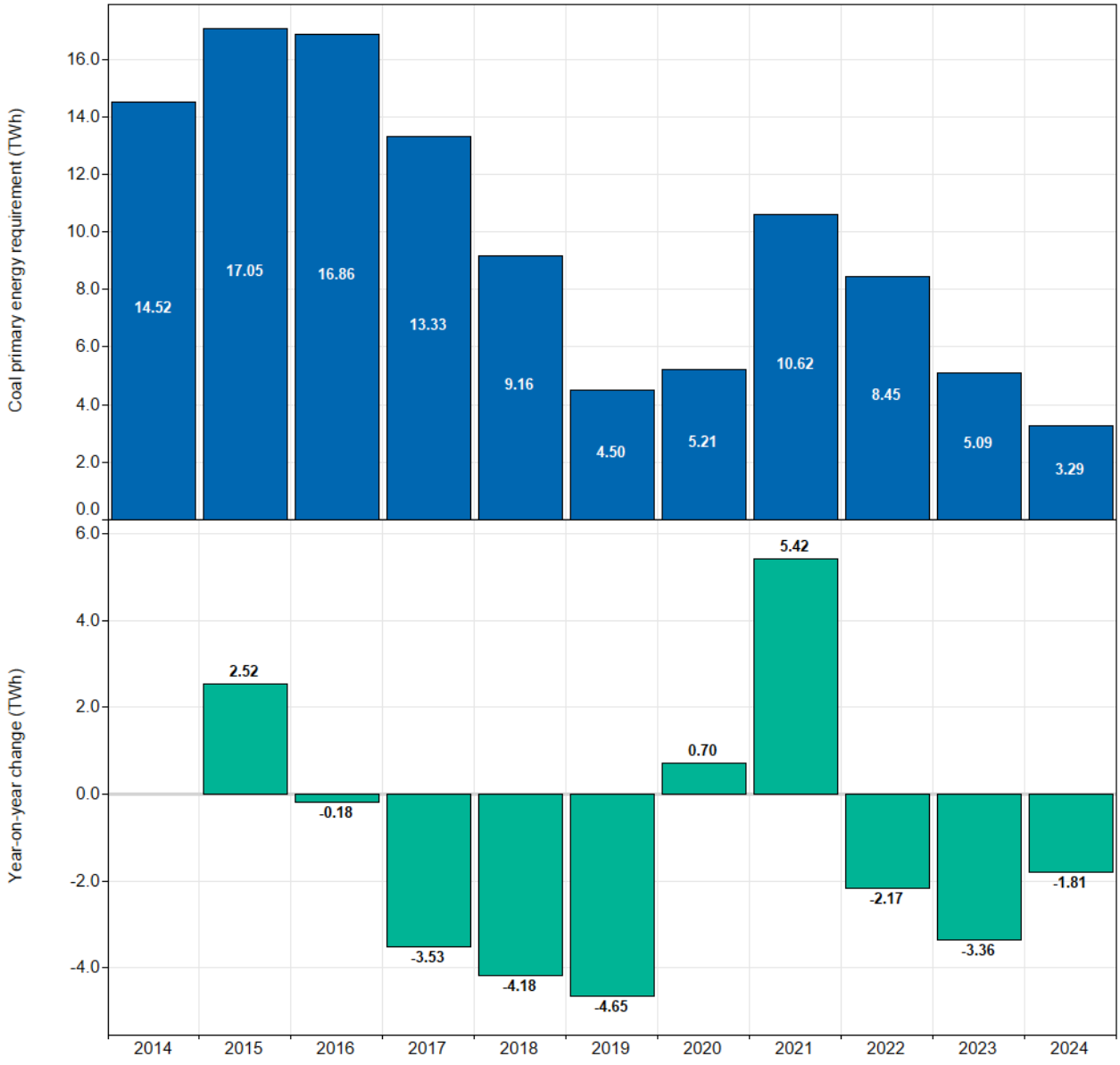
Data is collected in physical units (*i.e.* kilotonnes) and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) energy units by SEAI using conversion factors and densities on a net calorific value basis.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.8.1 Coal - primary energy requirement and annual change

Figure A.8.1 (top) shows Ireland's annual coal primary energy requirement for the last 11-years.

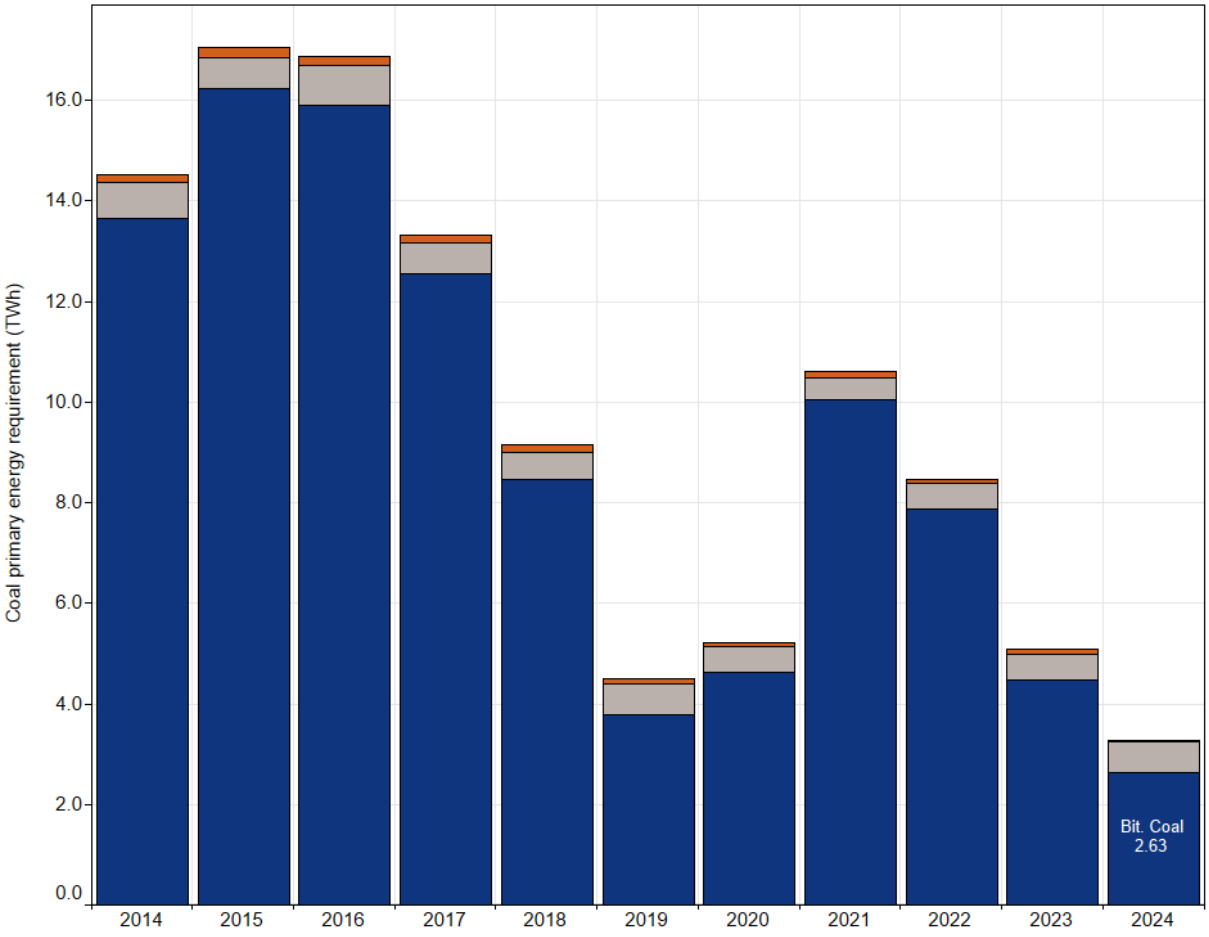
Figure A.8.1 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual coal primary energy requirement, *i.e.* the value in 2024 is the difference between the coal primary energy requirement in 2024 *vs.* 2023.



A.8.2 Coal - primary energy requirement by energy sub-product

Figure A.8.2 shows the annual coal primary energy requirement with an energy sub-product breakdown.

The energy sub-products marked as 'Bit. Coal', 'Anth. & MO', and 'Lignite BCB' stand for *bituminous coal, anthracite & manufactured ovoids,* and *lignite including brown coal briquettes*, respectively.



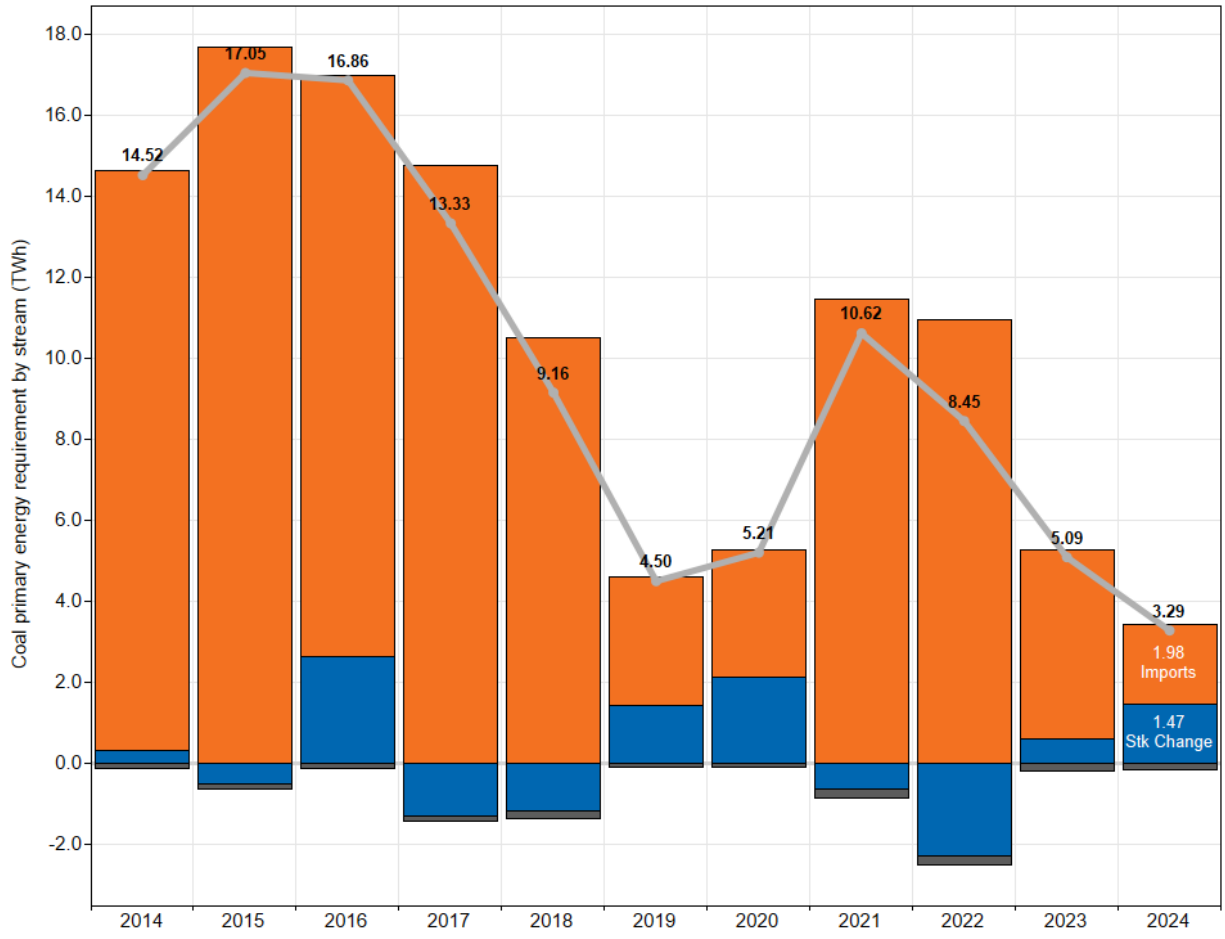
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bit. Coal	13.65	16.24	15.91	12.54	8.47	3.78	4.63	10.04	7.88	4.47	2.63
Anth. & MO	0.71	0.60	0.78	0.63	0.54	0.61	0.51	0.44	0.50	0.52	0.63
Lignite BCB	0.16	0.20	0.17	0.16	0.15	0.11	0.07	0.15	0.08	0.10	0.03
Coal PER (TWh)	**14.52**	**17.05**	**16.86**	**13.33**	9.16	4.50	5.21	10.62	8.45	5.09	3.29

A.8.3 Coal - primary energy requirement by stream

Figure A.8.3 shows Ireland's annual coal primary energy requirement broken out by stream.

The bars show the absolute energy quantity delivered or removed from coal primary energy requirement by each stream and the line shows the net coal primary energy requirement, calculated as a sum of the individual streams.

The stream marked as 'Stk Change' stands for *stock changes*.

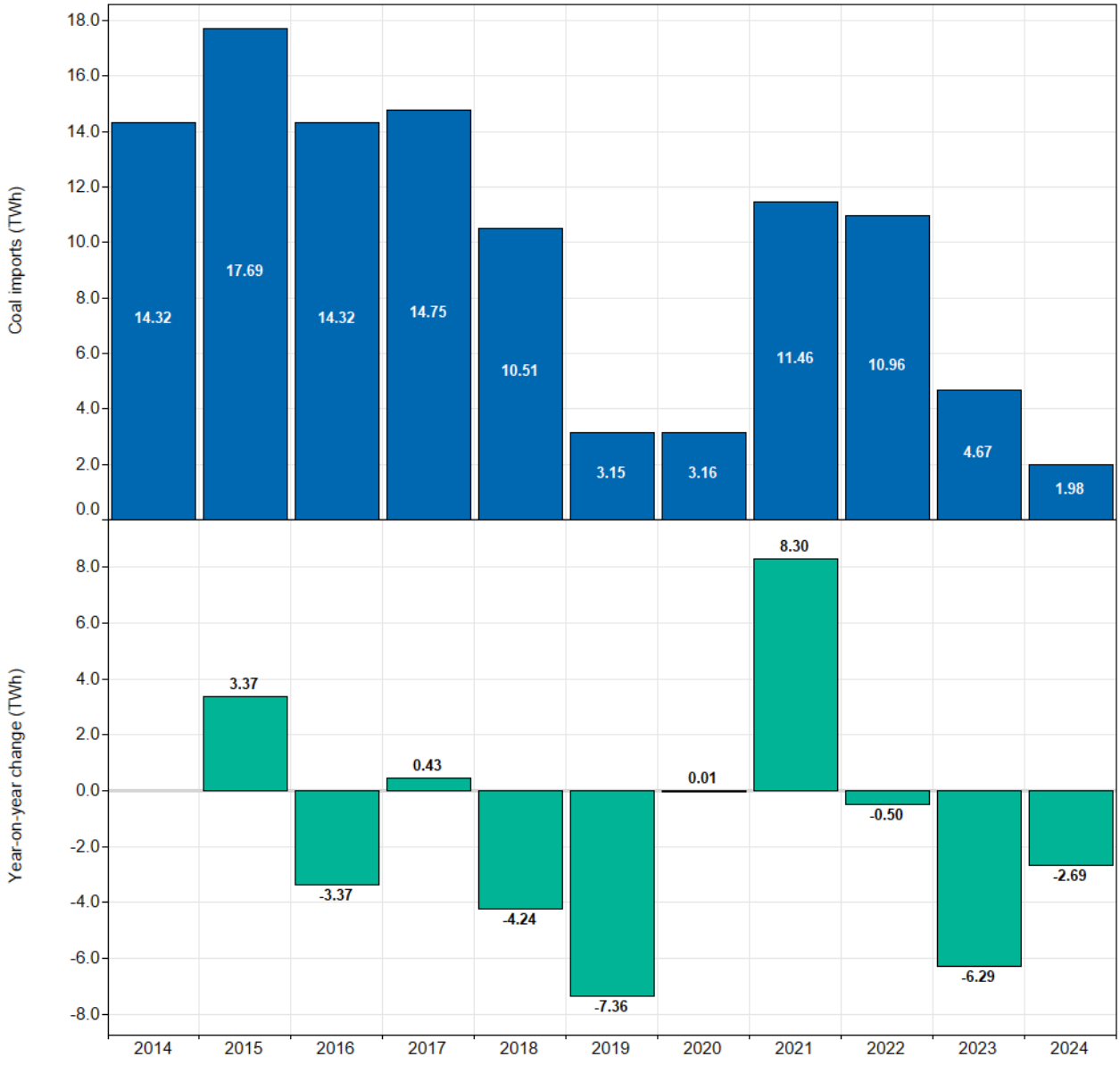


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Imports	14.32	17.69	14.32	14.75	10.51	3.15	3.16	11.46	10.96	4.67	1.98
Stk Change	0.32	-0.51	2.65	-1.31	-1.17	1.45	2.13	-0.64	-2.29	0.61	1.47
Exports	-0.12	-0.13	-0.11	-0.11	-0.18	-0.10	-0.08	-0.20	-0.21	-0.18	-0.16
Coal PER (TWh)	**14.52**	**17.05**	**16.86**	**13.33**	**9.16**	**4.50**	**5.21**	**10.62**	**8.45**	**5.09**	**3.29**

A.8.4 Coal - imports and annual change

Figure A.8.4 (top) shows Ireland's annual coal energy imports for the last 11-years.

Figure A.8.4 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual coal energy imports, *i.e.* the value in 2024 is the difference between the coal energy imports in 2024 *vs.* 2023.

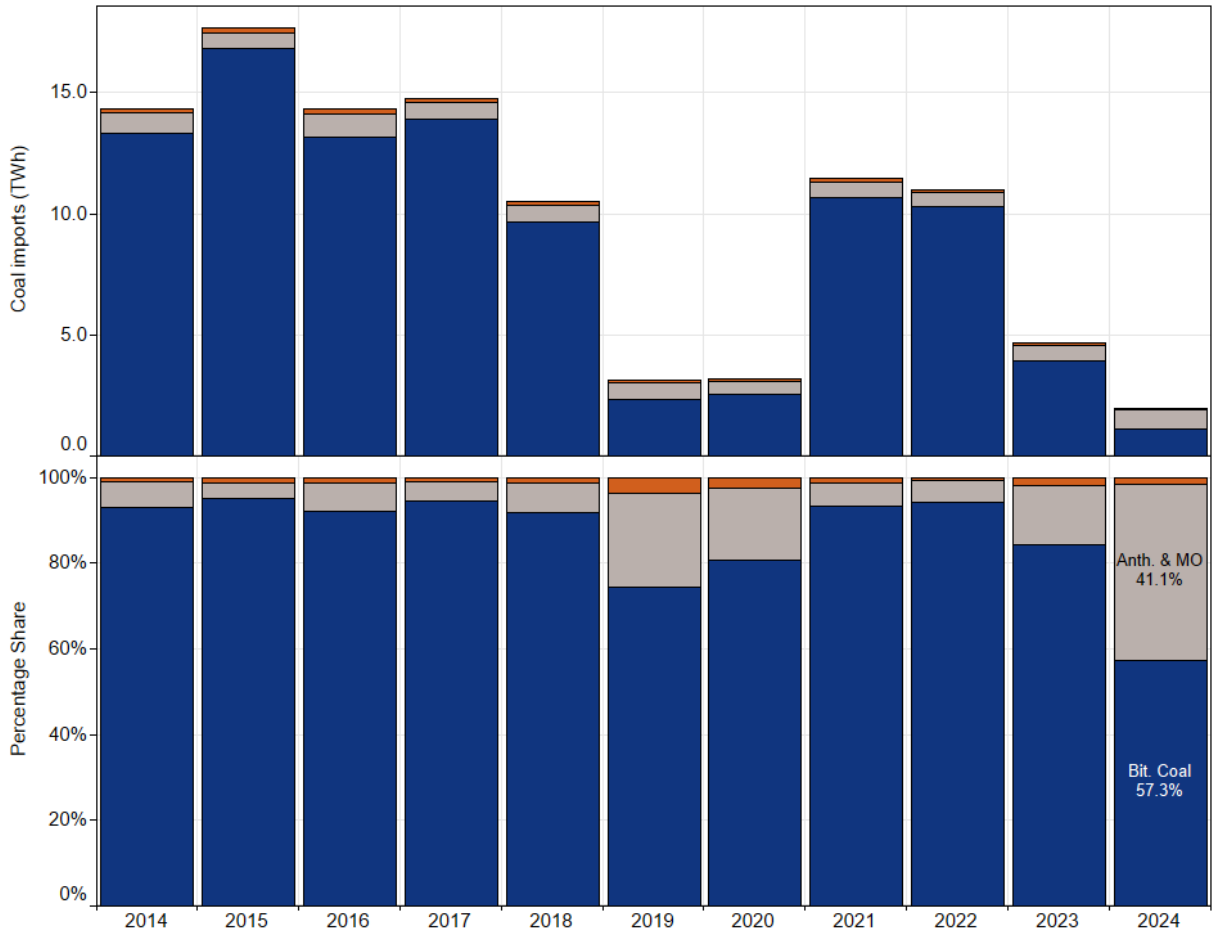


A.8.5 Coal - imports by sub-product

Figure A.8.5 (top) shows Ireland's total coal imports with its sub-product breakdown.

Figure A.8.5 (bottom) shows the sub-product breakdown displayed as a percentage of the total coal imports.

The energy sub-products marked as 'Bit. Coal', 'Anth. & MO', and 'Lignite BCB' stand for *bituminous coal, anthracite & manufactured ovoids,* and *lignite including brown coal briquettes*, respectively.

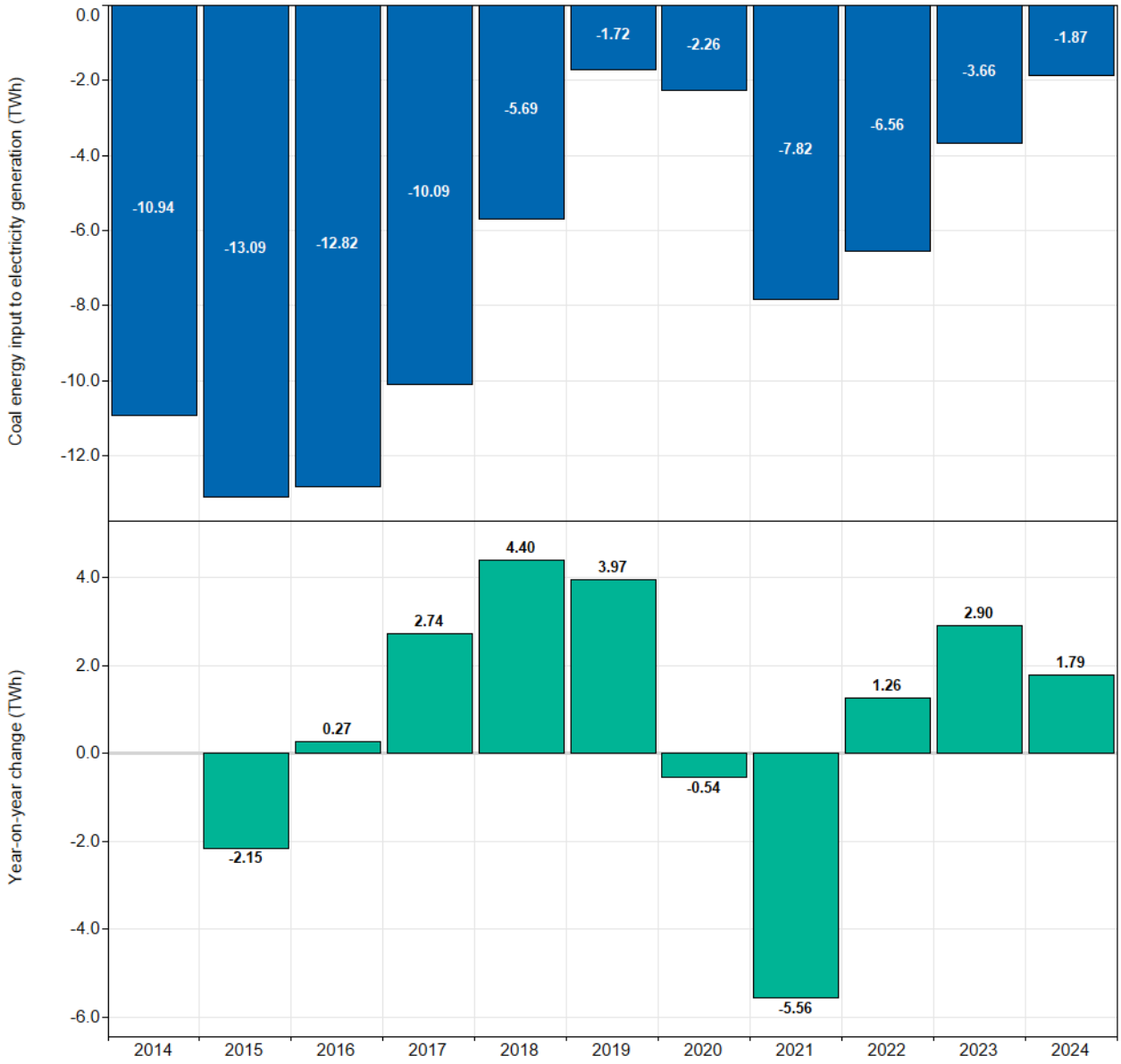


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bit. Coal	13.32 (93.0%)	16.83 (95.2%)	13.17 (92.0%)	13.92 (94.4%)	9.65 (91.8%)	2.35 (74.5%)	2.55 (80.7%)	10.69 (93.3%)	10.32 (94.1%)	3.94 (84.4%)	1.13 (57.3%)
Anth. & MO	0.84 (5.9%)	0.65 (3.7%)	0.95 (6.6%)	0.69 (4.7%)	0.72 (6.8%)	0.69 (21.8%)	0.53 (16.8%)	0.61 (5.4%)	0.58 (5.3%)	0.64 (13.8%)	0.81 (41.1%)
Lignite BCB	0.15 (1.1%)	0.21 (1.2%)	0.19 (1.3%)	0.14 (1.0%)	0.14 (1.4%)	0.12 (3.7%)	0.08 (2.5%)	0.16 (1.4%)	0.07 (0.6%)	0.09 (1.8%)	0.03 (1.6%)
Coal imports (TWh, %)	**14.32 (100.0%)**	**17.69 (100.0%)**	**14.32 (100.0%)**	**14.75 (100.0%)**	**10.51 (100.0%)**	**3.15 (100.0%)**	**3.16 (100.0%)**	**11.46 (100.0%)**	**10.96 (100.0%)**	**4.67 (100.0%)**	**1.98 (100.0%)**

A.8.6 Coal - input to electricity generation and annual change

Figure A.8.6 (top) shows Ireland's annual coal energy input to electricity generation, summed across public thermal power plants (PTPP) input and combined heat and power plants (CHP) input.

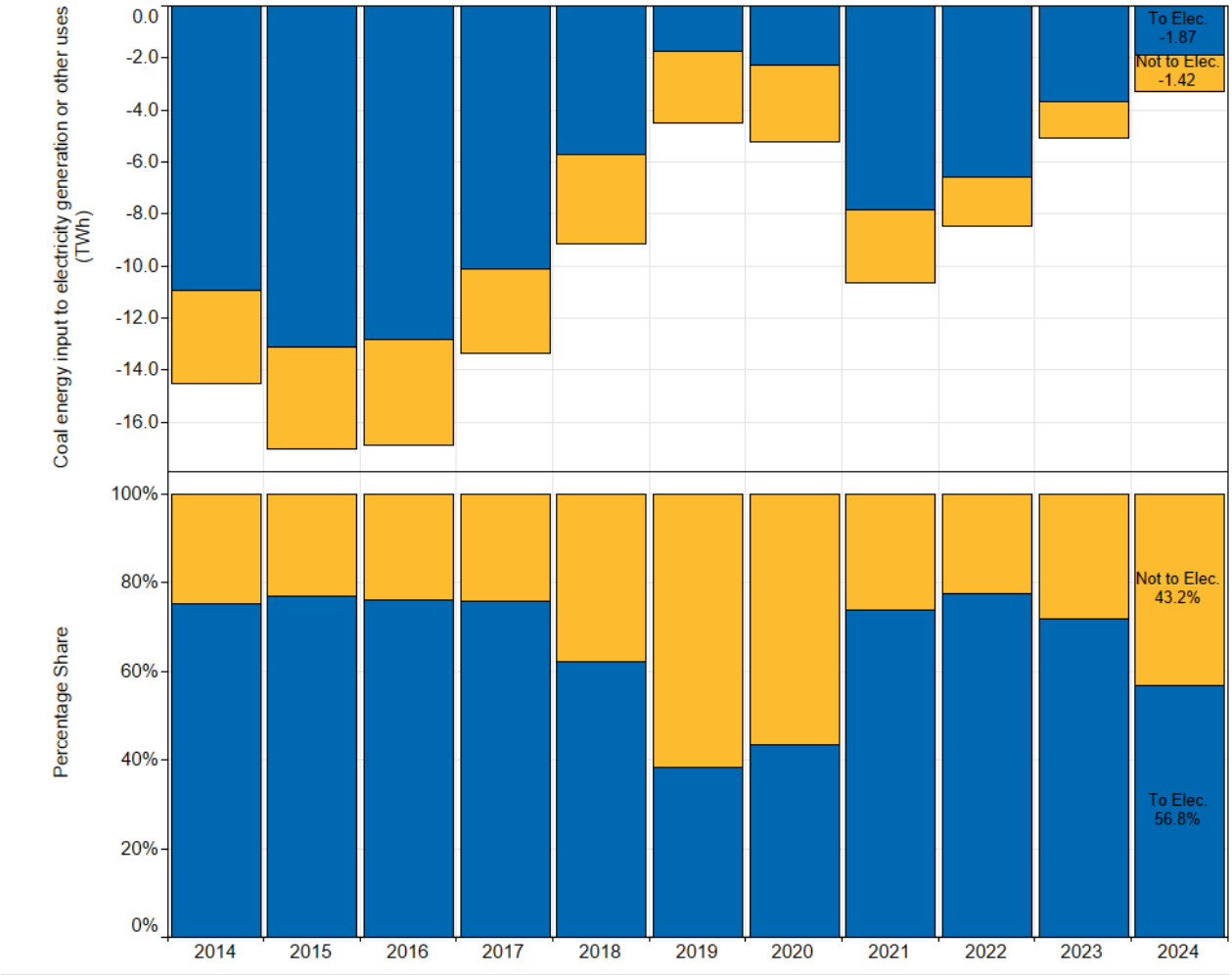
Figure A.8.6 (bottom) is a swing plot that shows the year-on-year changes in the annual coal energy input to electricity generation for the last 11-years, *i.e.* the value in 2024 is the difference between the annual coal energy inputs to electricity generation in 2024 *vs.* 2023.



A.8.7 Coal - input to electricity generation or other uses

Figure A.8.7 (top) shows Ireland's annual primary energy requirement of coal (summed across all relevant streams, *i.e.,* exports, imports and stock change), broken out as energy input to electricity generation, or other uses.

Figure A.8.7 (bottom) shows the percentage breakdown between coal energy input to electricity generation or other uses. This is displayed as a percentage of coal primary energy requirement each year.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
To Elec.	-10.94 (75.3%)	-13.09 (76.8%)	-12.82 (76.0%)	-10.09 (75.7%)	-5.69 (62.1%)	-1.72 (38.2%)	-2.26 (43.5%)	-7.82 (73.7%)	-6.56 (77.6%)	-3.66 (71.8%)	-1.87 (56.8%)
Not to Elec.	-3.59 (24.7%)	-3.95 (23.2%)	-4.04 (24.0%)	-3.25 (24.3%)	-3.47 (37.9%)	-2.78 (61.8%)	-2.94 (56.5%)	-2.80 (26.3%)	-1.89 (22.4%)	-1.43 (28.2%)	-1.42 (43.2%)
Coal PER (TWh)	**-14.52 (100.0%)**	**-17.05 (100.0%)**	**-16.86 (100.0%)**	**-13.33 (100.0%)**	**-9.16 (100.0%)**	**-4.50 (100.0%)**	**-5.21 (100.0%)**	**-10.62 (100.0%)**	**-8.45 (100.0%)**	**-5.09 (100.0%)**	**-3.29 (100.0%)**

Appendix 9. Trends in peat supply

Peat supply and transformation data has been informed by data provided to SEAI in survey responses received from solid fuel suppliers. It also includes data from public administration datasets including EU-ETS provided by the EPA to SEAI.

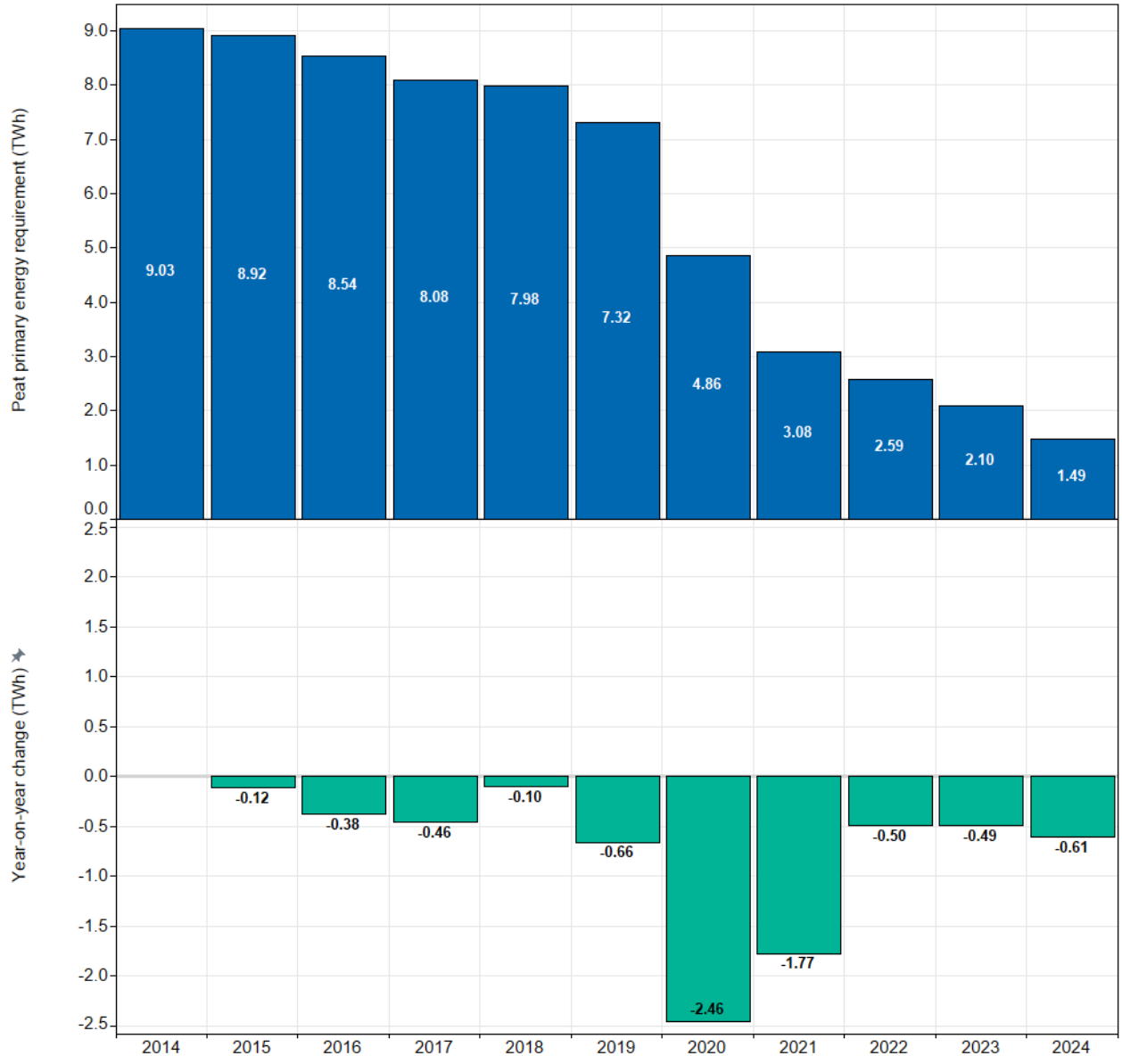
Data is collected in physical units (*i.e.* kilotonnes) and converted to kilotonnes of oil equivalent (ktoe) and terawatt hours (TWh) energy units by SEAI using conversion factors and densities on a net calorific value basis.

Unless otherwise specified, the following figures in this appendix are based on data from the National Energy Balance time-series, which is available from the SEAI website: https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/

A.9.1 Peat - primary energy requirement and annual change

Figure A.9.1 (top) shows Ireland's annual peat primary energy requirement for the last 11-years.

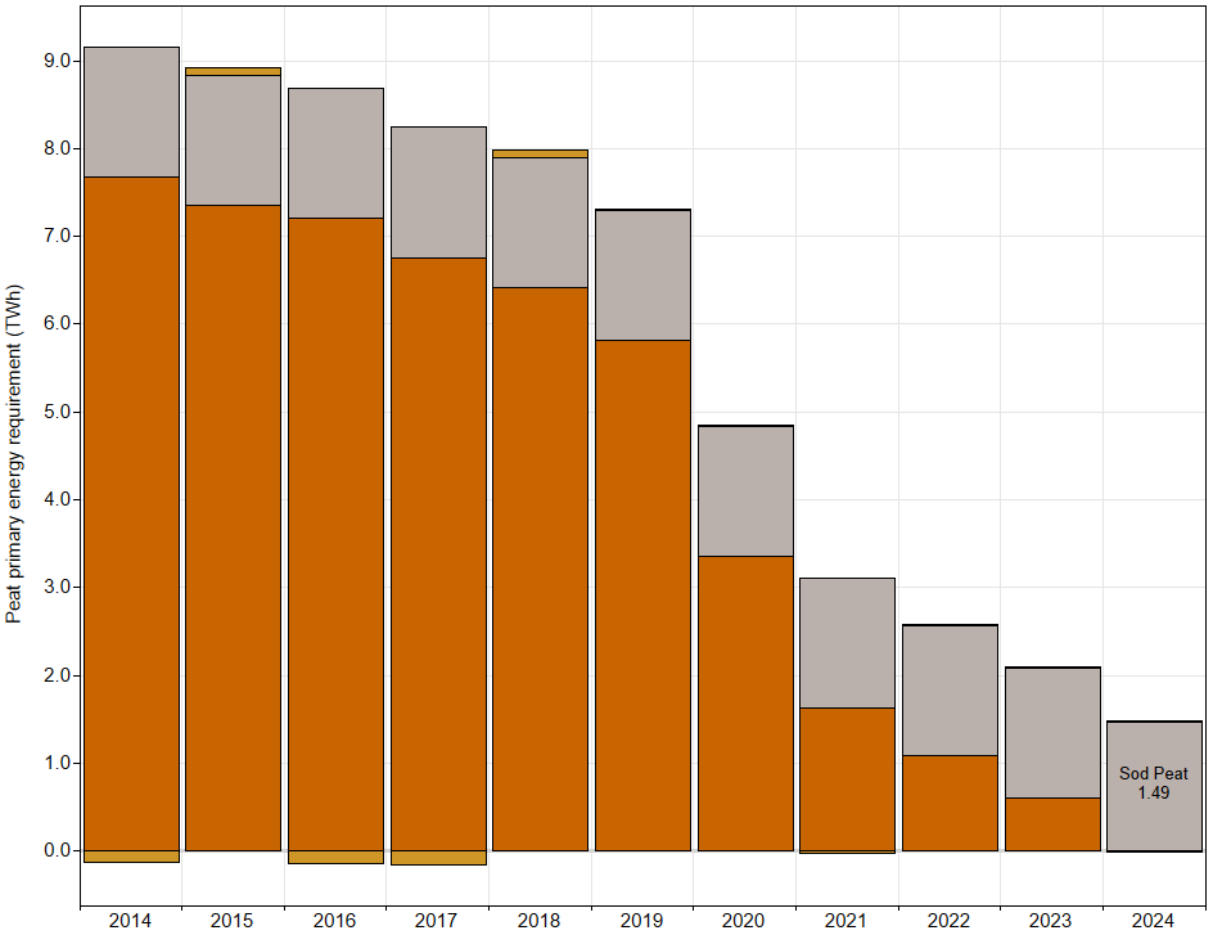
Figure A.9.1 (bottom) is a swing plot that shows the year-on-year changes in Ireland's annual peat primary energy requirement, *i.e.* the value in 2024 is the difference between the peat primary energy requirement in 2024 *vs.* 2023.



A.9.2 Peat - primary energy requirement by energy sub-product

Figure A.9.2 shows Ireland's annual peat primary energy requirement with an energy sub-product breakdown.

SEAI's data on sod peat extraction is based on an estimate provided by industry experts that is crosschecked against other solid fuel use in the residential sector. SEAI has recently engaged a 3rd party external consultant to provide input and recommendations on improving statistics on the supply and demand of peat for energy purposes.



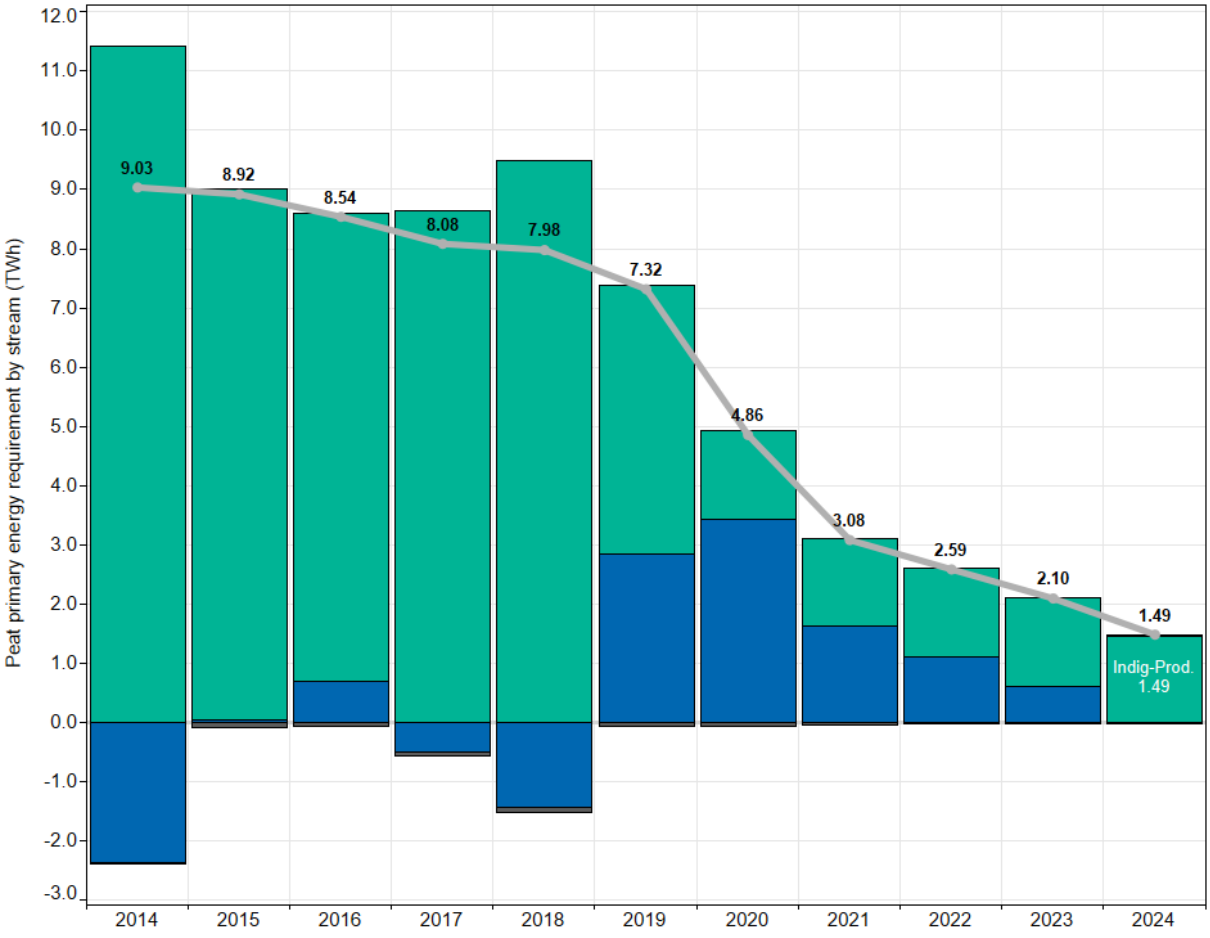
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Milled Peat	7.67	7.35	7.20	6.76	6.42	5.82	3.36	1.63	1.09	0.60	0.00
Sod Peat	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Briquettes	-0.12	0.08	-0.15	-0.16	0.08	0.02	0.01	-0.03	0.01	0.01	
Peat PER (TWh)	**9.03**	**8.92**	**8.54**	**8.08**	**7.98**	**7.32**	**4.86**	**3.08**	**2.59**	**2.10**	**1.49**

A.9.3 Peat - primary energy requirement by stream

Figure A.9.3 shows Ireland's annual peat primary energy requirement broken out by stream.

The bars show the absolute energy quantity delivered or removed from peat primary energy requirement by each stream and the line shows the net peat primary energy requirement, calculated as a sum of the individual streams.

The streams marked as 'Indig-Prod.' and 'Stk Change' stand for *indigenous production*, and *stock changes*, respectively.

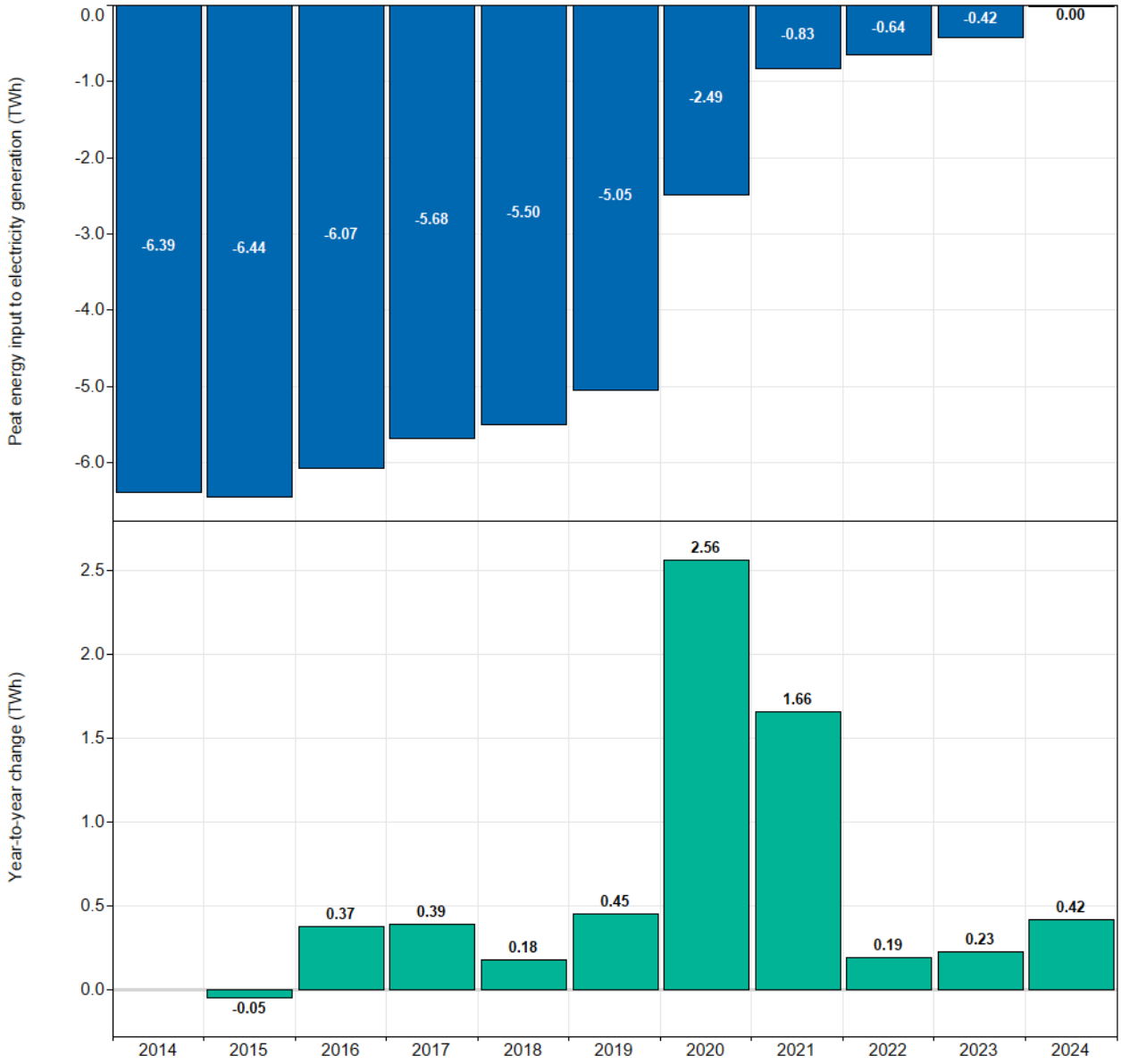


	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Indig-Prod.	11.42	8.95	7.90	8.65	9.49	4.54	1.49	1.49	1.49	1.49	1.49
Stk Change	-2.37	0.05	0.69	-0.50	-1.43	2.84	3.44	1.63	1.12	0.61	0.00
Exports	-0.02	-0.08	-0.05	-0.06	-0.08	-0.07	-0.07	-0.03	-0.01	0.00	
Peat PER (TWh)	**9.03**	**8.92**	**8.54**	**8.08**	**7.98**	**7.32**	**4.86**	**3.08**	**2.59**	**2.10**	**1.49**

A.9.4 Peat - input to electricity generation and annual change

Figure A.9.4 (top) shows Ireland's annual peat energy input to electricity generation, summed across public thermal power plants (PTPP) input and combined heat and power plants (CHP) input.

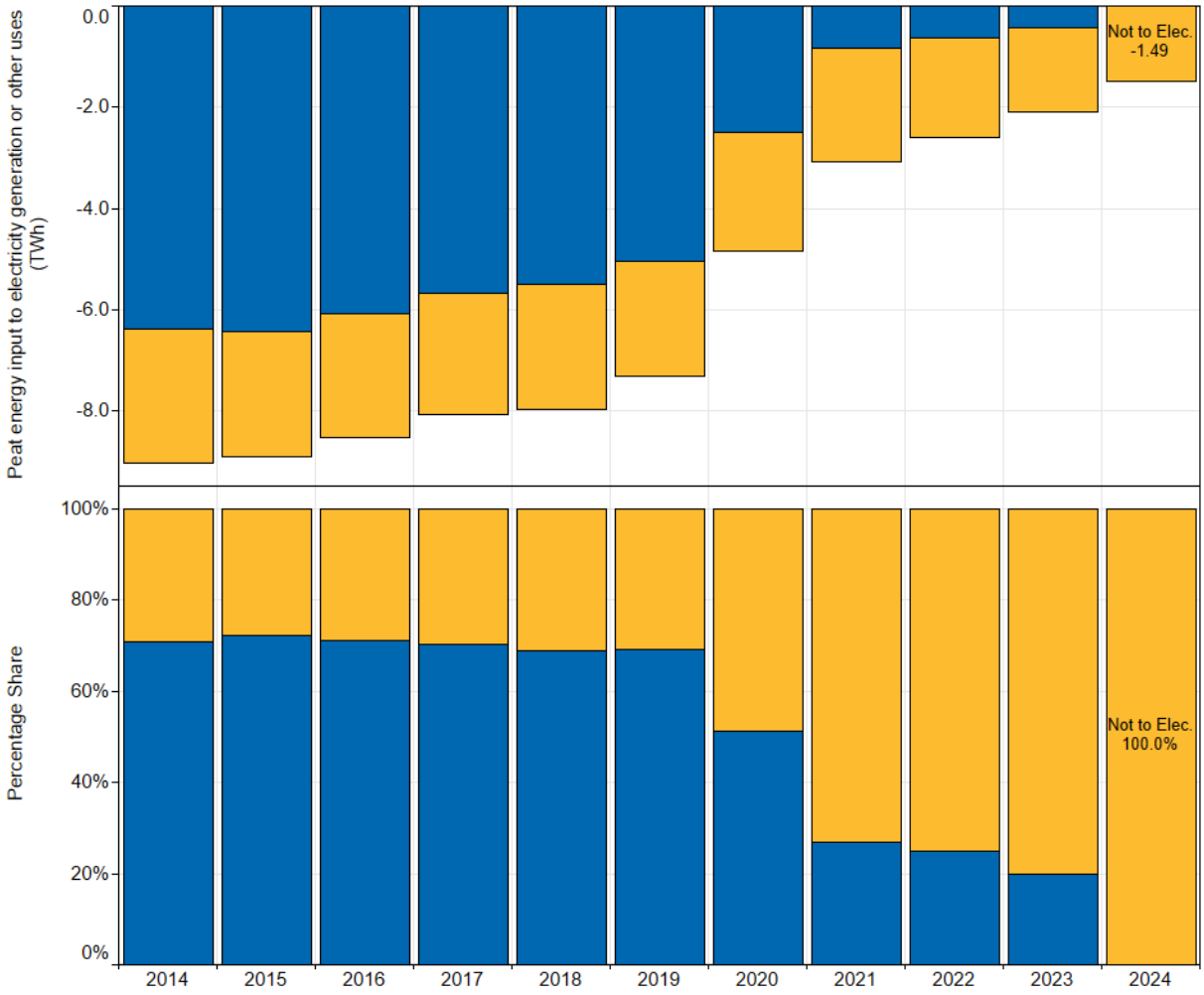
Figure A.9.4 (bottom) is a swing plot that shows the year-on-year changes in the annual peat energy input to electricity generation for the last 11-years, *i.e.* the value in 2024 is the difference between the annual peat energy inputs to electricity generation in 2024 *vs.* 2023.



A.9.5 Peat - input to electricity generation or other uses

Figure A.9.5 (top) shows Ireland's annual primary energy requirement of peat (summed across all relevant streams, *i.e.*, exports, national production and stock change), broken out as energy input to electricity generation, or other uses.

Figure A.9.5 (bottom) shows the percentage breakdown between peat energy input to electricity generation or other uses. This is displayed as a percentage of peat primary energy requirement each year.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
To Elec.	-6.39 (70.8%)	-6.44 (72.2%)	-6.07 (71.1%)	-5.68 (70.2%)	-5.50 (68.9%)	-5.05 (69.0%)	-2.49 (51.2%)	-0.83 (27.0%)	-0.64 (24.9%)	-0.42 (19.9%)	0.00 (0.0%)
Not to Elec.	-2.64 (29.2%)	-2.47 (27.8%)	-2.47 (28.9%)	-2.40 (29.8%)	-2.48 (31.1%)	-2.27 (31.0%)	-2.37 (48.8%)	-2.25 (73.0%)	-1.94 (75.1%)	-1.68 (80.1%)	-1.49 (100.0%)
Peat PER (TWh)	**-9.03 (100.0%)**	**-8.92 (100.0%)**	**-8.54 (100.0%)**	**-8.08 (100.0%)**	**-7.98 (100.0%)**	**-7.32 (100.0%)**	**-4.86 (100.0%)**	**-3.08 (100.0%)**	**-2.59 (100.0%)**	**-2.10 (100.0%)**	**-1.49 (100.0%)**

Appendix 10. Relevant Data Sources and Links

The primary data source for this note and its appendices is the 2024 *interim* national energy balance, published by SEAI in May 2025. The *interim* national energy balance [1], related figures [2] and conversion factors [3] are available for download on the SEAI website.

Downloadable sources for other plots and tables in this note can be found through the Eurostat data browser,[4,5] the EirGrid website,[6] the ESB Networks website[7] and the National Oil Reserves Agency (NORA) website.[8]

Please note that the publication of the 2024 *full* national energy balance in September 2025 will supersede data in the 2024 *interim* national energy balance. The full energy balance will include sectoral energy demand breakdowns that are not available to SEAI at the time of publication of the interim balance. The additional granularity afforded by the full energy balance will allow for the calculation of renewable energy share (RES) results for electricity, transport, and heating.

Please note that due to the standard convention of rounding-up numerical values to the lowest significant figure, the sum of sub-components values in some plots and tables may differ slightly from the total value given in the same plot or table.

[1] SEAI, "National energy balance," [Online].
https://www.seai.ie/data-and-insights/seai-statistics/key-publications/national-energy-balance/.

[2] SEAI, "Annual energy data", [Online].
https://www.seai.ie/data-and-insights/seai-statistics/annual-energy-data/

[3] SEAI, "Conversion factors," [Online].
https://www.seai.ie/data-and-insights/seai-statistics/conversion-factors/.

[4] Eurostat, "Imports of oil and petroleum products by partner country - monthly data (nrg_ti_oilm)", [Online].
https://ec.europa.eu/eurostat/databrowser/view/nrg_ti_oilm__custom.

[5] Eurostat, "Emergency oil stocks in days equivalent - monthly data (nrg_stk_oem)", [Online].
https://ec.europa.eu/eurostat/databrowser/view/nrg_stk_oem__custom_16536219/default/table?lang=en [nrg_stk_oem] .

[6] EirGrid, "System and renewable data summary report", [Online].
https://www.eirgrid.ie/grid/system-and-renewable-data-reports

[7] ESB Networks, "Renewable distribution connected generation – summary report", [Online].
https://www.esbnetworks.ie/services/get-connected/renewable-connection/generator-statistics

[8] NORA, "Obligation volumes", [Online]
https://www.nora.ie/oil-stocks

Appendix 11. Version control

Version	Date	Note
1.0	06-08-2025	Initial public release

SUSTAINABLE ENERGY AUTHORITY OF IRELAND

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