
S&P Global

Trucost Environmental Data

Xpressfeed™ User Guide

Corporate Environmental Performance



Client Support

Email: support.datafeed.mi@spglobal.com File delivery support is available 24/7/365			
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Mexico	303.721.4802	Japan	+81.3.4550.8350 8:00 a.m. – 5:00 p.m. local time Monday – Friday
Europe	+44. 20.7176.8580	South Korea	+82.2.2022.2395 8:00 a.m. – 5:00 p.m. local time Monday – Friday

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Document Overview

What You Will Find in This User Guide

This document provides a comprehensive overview of Trucost Environmental Data through Xpressfeed™ (“Trucost data”).

This document provides:

- the data structure of the packages including schema
- specific details about working with the data
- a common way of querying Trucost data with SQL examples

This guide is for clients who use the Xpressfeed Loader to load the Trucost data packages as well as for clients who download the files directly from our server.

Supporting Documentation

These additional documents on the [Support Center website](#) will help you make the most of Xpressfeed and Trucost data packages:

- *Trucost Environmental Data Item List* – This spreadsheet provides table names by package and dataItemIds/data item names/data item definitions that exist in each table.
- *Trucost Environmental Data – Methodology Guide* – This document describes the methods by which Trucost environmental data is collected, standardized, and calculated.
- *S&P Capital IQ Base Files User Guide* – The Base Files associate companies, symbols, securities, and other objects across all S&P Capital IQ data sets. This guide describes the data structure of the Base Files as well as integration of the Base Files with other S&P Capital IQ data sets.
- *Xpressfeed Loader User Guide* – This user guide outlines the features and capabilities of the Xpressfeed Loader. The Xpressfeed Loader generates a database schema and structure and loads the data records as a set of fully indexed tables. The Loader automates the daily updates of records and keeps your database up to date.

- *Xpressfeed File Delivery Technical Guide* – This guide provides information for clients who download S&P Global Market Intelligence data files directly from our server and write their own loading procedures.
- *File Format Spreadsheets* – These spreadsheets contain full and change file zip file prefixes, individual text file names, and information for each column in the file (e.g., column names, column data types, whether the column is nullable, and primary keys).
- *Xpressfeed File Delivery Schedule* – This spreadsheet provides expected full and change file delivery times as well as the length of time the files remain on the server.
- *SNL Reference Data User Guide* – This user guide provides the schema for the SNL Reference package and detailed descriptions of all tables and fields; information on how to link SNL Reference data to S&P Capital IQ data sets or to Compustat data using the Company Cross Reference File; and common ways of querying SNL Reference data and SQL examples.

If you are linking to other S&P Global Market Intelligence data sets, supporting documents are available on the [Support Center website](#).

Executive Summary

Trucost Data

Trucost data contains information on the environmental impact of different business activities. Trucost metrics assess the risks relating to hundreds of environmental issues, encompassing carbon and other pollutants, water dependency, natural resource efficiency, and waste disposal. Companies, financial institutions, investors, and policy makers use Trucost data to understand their environmental exposure, inform resilience, and identify transformative solutions for a low-carbon, resource-efficient global economy. Trucost data is part of S&P Global Market Intelligence's broader environmental, social, and governance (ESG) initiative.¹

Trucost data consists of raw and calculated values at the company level and sector level. Company-level data includes the company's operational environmental impact and the environmental impact of its upstream supply chain. Sector-level data includes the environmental impact of a Trucost-defined company or business sectors within which the company operates.

Company-level data

- Environmental Data
- Fossil Fuels & Energy Data

Sector-level data

- Sector Fossil Fuels & Energy Data
- Sector Revenue Data

Data coverage

Trucost data contains quantitative information on the direct and supply chain environmental impacts for a universe of over 15,000 companies, representing 95% of global market capitalization², associated with approximately 500 distinct industry sectors across over 100 environmental key performance indicators (KPIs). Information about

¹ Trucost is part of S&P Global Market Intelligence. Trucost has been measuring the environmental performance of companies since 2000, providing essential ESG data and analytics to a rapidly growing number of clients. To learn more about Trucost, visit www.trucost.com.

² Trucost's *Core Plus* universe (which includes its *Core* universe) consists of companies in the S&P Broad Market Index (BMI) (approximately 11,500 large-, mid-, small- and micro-cap companies); S&P China A SmallCap 300 Index; S&P 500 Index; S&P Global 1200 Index; S&P/TOPIX 150 Index; S&P/TSX Composite Index; S&P/ASX 200 Index; S&P/ASX 300 Index; and other large listed companies added per client request (approximately 1,500 companies). An additional universe—*Cemetery*—consists of approximately 1,000 delisted or 'dead' companies.

each company's environmental impact is updated annually using a mix of disclosed and, where gaps are present, modeled data. Historical coverage for small- and mid-cap companies starts from 2016; historical coverage for large-cap companies goes back to 2005.

Trucost data can help you:

- Understand your exposure to climate change, natural resource constraints, and broader environmental factors
- Create shareholder value by engaging with companies and investors on ESG factors
- Quantify and price risks in your portfolios
- Assess and manage operational and supplier risks
- Inform green investment and reveal environmental exposure
- Report to stakeholders on environmental risks in your portfolios

Packages and Populations

Trucost data is organized into the following packages in Xpressfeed:

Company-level data packages³

Trucost Period Data (TrucostPeriodData): This package is the foundation of the Trucost company level packages. The package contains the unique company identifier, reported currency, primary sector, fiscal year, and period end date.

Trucost Environmental Data (TrucostEnvironmentalData): This package contains data that helps assess the environmental impact of a company's direct, supply chain and downstream operations. The package includes financial data, greenhouse gas emissions, water usage, quantity of waste generated, land and water pollutants, air pollutants, and natural resources extraction. The package also contains absolute values, intensity relative to revenue, external cost, and external cost as a percentage of revenue for selected data.

Trucost Fossil Fuels and Energy Data (TrucostFossilFuelsandEnergyData): This package contains proven and probable fossil fuel reserves and power generated from various sources of energy. The package also includes greenhouse gas emissions from reserves and generated power, capital expenditure on exploration of fossil fuels, and revenues generated from various forms of coal mining.

Sector-level data packages⁴

Trucost Sector Period Data (TrucostSectorPeriodData): This package is the foundation of the Trucost sector level packages. The package contains the unique company identifier, reported currency, primary sector, sector identifier, fiscal year, and period end date.

Trucost Sector Fossil Fuels and Energy Data (TrucostSectorFossilFuelsandEnergyData): This package contains proven and probable fossil fuel reserves and power generated from various sources of energy for each sector the company is operating in. The package also includes Greenhouse gas emissions from reserves and generated power, capital expenditure on exploration of fossil fuels and revenues generated from various forms of coal mining.

³ The company-level package structure also includes the following sample packages: Trucost Period Data Sample (sample package for the Trucost Period Data package); and Trucost Data Sample (sample package for the Trucost Environmental Data and Trucost Fossil Fuel and Energy Data packages).

⁴ The sector-level package structure also includes the following sample packages: Trucost Sector Period Data Sample (sample package for the Trucost Sector Period Data package); and Trucost Sector Data Sample (sample package for the Trucost Sector Fossil Fuels and Energy Data and Trucost Sector Revenue Data packages).

Trucost Sector Revenue Data (*TrucostSectorRevenueData*): This package contains revenue generated from each sector in which a given company has operations.

Trucost reference data package

Trucost Reference (*TrucostReference*): This package contains supporting look-up tables for all the Trucost packages. The package includes a list of data items used in Trucost packages and a list of Trucost sectors.

Linking Across Other Data Sets

Company Cross Reference File

The Company Cross Reference File is delivered to clients who wish to link Trucost data to S&P Capital IQ data or to Compustat data. Two identifier packages are available:

BECRS SNL Identifier Package: To link to S&P Capital IQ data, the BECRS SNL Identifier Package provides cross reference mapping between the SNL *institutionId* (aka MI Id) and the S&P Capital IQ *companyId*. The *companyId* links to the S&P Capital IQ Base Files - Company Foundation File for more descriptive company-level data.

BECRS Compustat GVKEY Identifier Package: For clients who wish to link to Compustat Fundamental data, the BECRS GVKEY Identifier Package provides cross reference mapping between the S&P Capital IQ *companyId* and the Compustat GVKEY. To map Trucost data to Compustat data, link the SNL *institutionId* (aka MI Id) to the S&P Capital IQ *companyId* and then link the S&P Capital IQ *companyId* to the Compustat GVKEY.

See the *SNL Reference Data User Guide* on the [Support Center website](#) for more information.

Company Foundation File

The Company Foundation File contains the *companyId* (the S&P Capital IQ unique entity identifier). The Company Foundation File provides descriptors for the entity, such as name, address, country, etc.

See the *S&P Capital IQ Base Files User Guide* on the [Support Center website](#) for more information on the Company Foundation File.

Xpressfeed Delivery Frequency

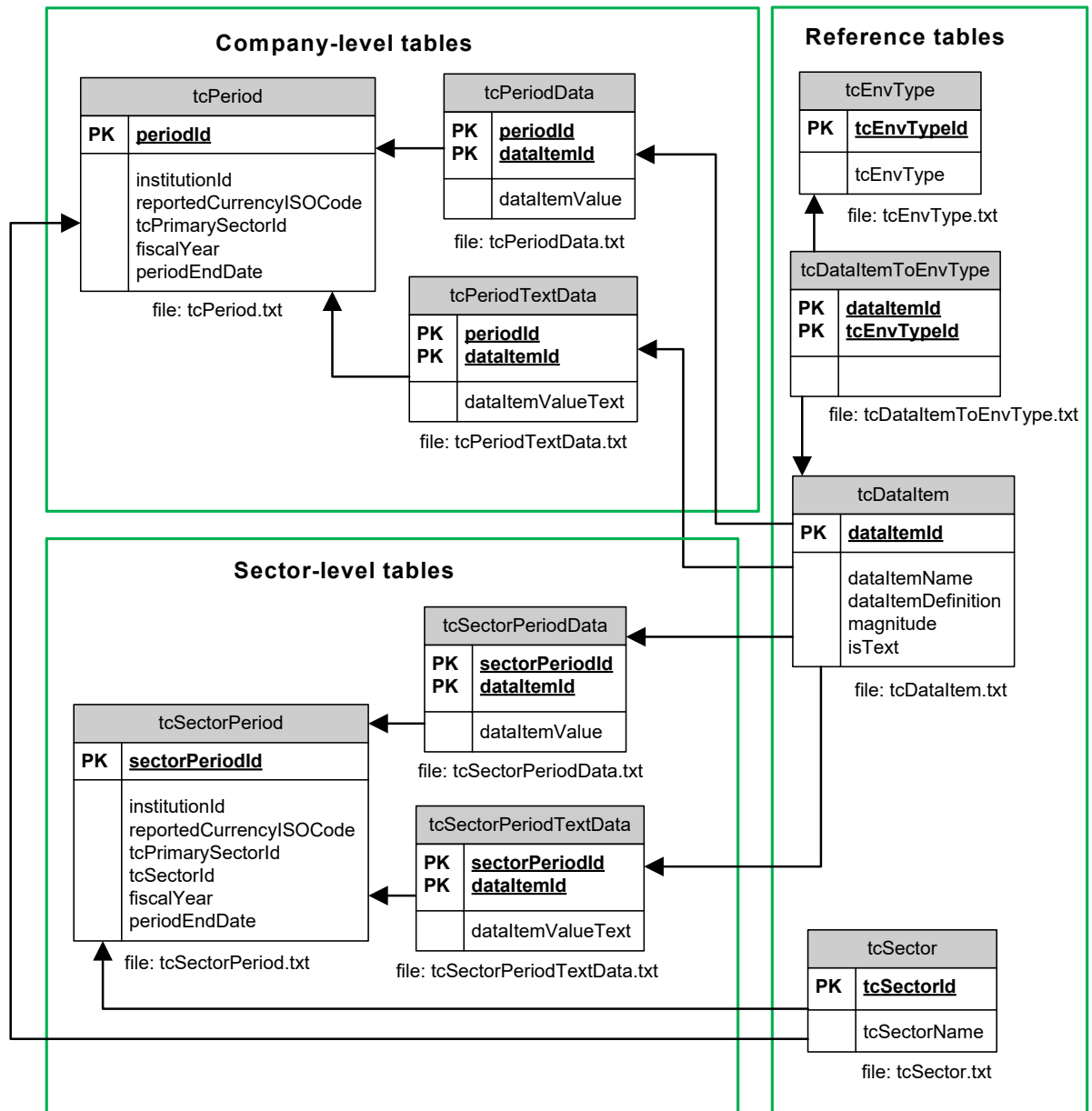
All Trucost data packages are delivered daily. If there are no daily changes, an empty file is still produced. A full data package is available weekly.

For a list of Trucost data packages and the file delivery schedule, please refer to the *Xpressfeed File Delivery Schedule* on the [Support Center website](#).

Trucost Data Schema

The following Trucost data schema displays tables included in the data packages. Primary keys appear in bold font and are designated with the abbreviation “PK.” All tables reflect Xpressfeed Loader table names. The associated file name for FTP clients is given beneath each table.

The schema provides each field contained within a record. For clients using a custom loading process, you may find the diagram helpful in identifying primary keys and in applying change file updates.



Company-Level Data Packages

Following is a detailed description of each table and field in the Trucost company-level data packages.

Primary keys are shown first in the tables that follow. To determine the actual field ordering as well as field character length, please refer to the *Xpressfeed File Format spreadsheets* on the Support Center website.

tcPeriod

The **tcPeriod** table provides the Trucost *institutionId*, the reported currency code, and primary sector ID as of a particular time period.

tcPeriod	
PK	<u>periodId</u>
	institutionId reportedCurrencyISOCode tcPrimarySectorId fiscalYear periodEndDate

tcPeriod.txt

Table 1. tcPeriod table fields

Column Name	Data Type	Description
periodId	char(36)	Unique identifier for end-of-period financial data.
institutionId	int	Unique key to identify institutions.
reportedCurrencyISOCode	char(3)	Alphabetic code used to identify currencies pursuant to ISO-4217. Currency values are currently reported in USD.
tcPrimarySectorId	nvarchar(11)	Unique identifier for the primary sector
fiscalYear	smallint	Company's fiscal year for which this financial information is applicable.
periodEndDate	datetime	Date on which the fiscal period ended.

tcPeriodData

The **tcPeriodData** table provides data items and numeric values for a particular time period.

tcPeriodData	
PK PK	<u>periodId</u> <u>dataItemId</u>
	dataItemValue

file: tcPeriodData.txt

Table 2. tcPeriodData table fields

Column Name	Data Type	Description
periodId	char(36)	Unique identifier for end-of-period financial data.
dataItemId	int	Unique identifier for the Trucost data item.
dataItemValue	numeric(38,19)	Numeric value for the Trucost financial data item.

tcPeriodTextData

The **tcPeriodTextData** table provides data items and textual values for a particular time period.

tcPeriodTextData	
PK	<u>periodId</u>
PK	<u>dataItemId</u>
	dataItemValueText

file: tcPeriodTextData.txt

Table 3. tcPeriodTextData table fields

Column Name	Data Type	Description
periodId	char(36)	Unique identifier for end-of-period financial data.
dataItemId	int	Unique identifier for the Trucost data item.
dataItemValueText	nvarchar(2000)	Textual value for the Trucost financial data item.

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Sector-Level Data Packages

Following is a detailed description of each table and field in the Trucost sector-level data packages.

Primary keys are shown first in the tables that follow. To determine the actual field ordering as well as field character length, please refer to the *Xpressfeed File Format spreadsheets* on the Support Center website.

tcSectorPeriod

The **tcSectorPeriod** table provides the Trucost *institutionId*, the reported currency code, primary sector ID, and the Trucost sector ID as of a particular time period.

tcSectorPeriod	
PK	<u>sectorPeriodId</u>
	institutionId reportedCurrencyISOCode tcPrimarySectorId tcSectorId fiscalYear periodEndDate

file: tcSectorPeriod.txt

Table 4. tcSectorPeriod table fields

Column Name	Data Type	Description
sectorPeriodId	char(36)	Unique identifier for the Trucost financial sector.
institutionId	int	Unique key to identify institutions.
reportedCurrencyISOCode	char(3)	Alphabetic code used to identify currencies pursuant to ISO-4217. Currency values are currently reported in USD.

Column Name	Data Type	Description
tcPrimarySectorId	nvarchar(11)	Unique identifier for the primary sector
tcSectorId	nvarchar(11)	Trucost sector identifier
fiscalYear	smallint	Company's fiscal year for which this financial information is applicable.
periodEndDate	datetime	Date on which the fiscal period ended.

tcSectorPeriodData

The **tcSectorPeriodData** table provides data items and numeric values for a particular sector period.

tcSectorPeriodData	
PK PK	<u>sectorPeriodId</u> <u>dataItemId</u>
	dataItemValue

file: tcSectorPeriodData.txt

Table 5. tcSectorPeriodData table fields

Column Name	Data Type	Description
sectorPeriodId	char(36)	Unique identifier for the Trucost financial sector.
dataItemId	int	Unique identifier for the Trucost data item.
dataItemValue	numeric(38,19)	Numeric value for the Trucost financial data item.

tcSectorPeriodTextData

The **tcSectorPeriodTextData** table provides data items and textual values for a particular sector period.

tcSectorPeriodTextData	
PK	<u>sectorPeriodId</u>
PK	<u>dataItemId</u>
	dataItemValueText

file: tcSectorPeriodTextData.txt

Table 6. tcSectorPeriodTextData table fields

Column Name	Data Type	Description
sectorPeriodId	char(36)	Unique identifier for Trucost financial sector.
dataItemId	int	Unique identifier for the Trucost data item.
dataItemValueText	nvarchar(2000)	Textual value for the Trucost financial data item.

Trucost Reference Data Package

Following is a detailed description of each table and field in the Trucost reference data package.

Primary keys are shown first in the tables that follow. To determine the actual field ordering as well as field character length, please refer to the *Xpressfeed File Format spreadsheets* on the Support Center website.

tcEnvType

The **tcEnvType** table provides reference data for all the environment types for which Trucost data is available.

tcEnvType	
PK	<u>tcEnvTypeId</u>
	tcEnvType

file: tcEnvType.txt

Table 7. tcEnvType table fields

Column Name	Data Type	Description
tcEnvTypeId	tinyint	Unique Trucost numerical identifier for the environment type.
tcEnvType	varchar(255)	Trucost environment type description

tcEnvType by *tcEnvType*

tcEnvType	tcEnvType
1	Trucost Environmental Data
2	Trucost Fossil Fuels and Energy Data
3	Trucost Sector Fossil Fuels and Energy Data
4	Trucost Sector Revenue Data

tcDataItem

The **tcDataItem** table provides reference data for Trucost data items.

tcDataItem	
PK	<u>dataItemId</u>
	dataItemName dataItemDefinition magnitude isText

file: tcDataItem.txt

Table 8. tcDataItem table fields

Column Name	Data Type	Description
dataItemId	int	Unique identifier for the Trucost data item.
dataItemName	varchar(255)	Trucost data item name.
dataItemDefinition	varchar(1000)	Data item definition.
magnitude	varchar(255)	Units in which the measurement is made.
isText	bit	Flag indicating whether the data item value is numeric (0) or text (1).

*dataItemId by dataItemName, dataItemDefinition, magnitude, and isText**

dataItemId	dataItemName	dataItemDefinition	magnitude	isText
319522	Company Revenue	Company revenue calculated as the net interest income plus all positive revenues, fees, commission income, excluding negative income and income from assets	\$M	0
319523	Company Sector Revenue	Company sector revenue calculated as the net interest income plus all positive revenues, fees, commission income, excluding negative income and income from assets	\$M	0
319482	Company Proven Reserves: Conventional Oil	Proven reserves (90% chance of being present) of conventional oil	MMBbls	0
319483	Company Sector Proven Reserves: Conventional Oil	Proven reserves (90% chance of being present) of conventional oil within the sector	MMBbls	0
319498	Company Probable Reserves: Conventional Oil	Probable reserves (50% chance of being present) of conventional oil	MMBbls	0
319499	Company Sector Probable Reserves: Conventional Oil	Probable reserves (50% chance of being present) of conventional oil within the sector	MMBbls	0

*Partial presentation of results

tcDataItemToEnvType

The **tcDataItemToEnvType** table provides the mapping between Trucost data items and the environment types.

tcDataItemToEnvType	
PK	<u>dataItemId</u>
PK	<u>tcEnvTypeId</u>

file: tcDataItemToEnvType.txt

Table 9. tcDataItemToEnvType table fields

Column Name	Data Type	Description
dataItemId	int	Unique identifier for the Trucost data item.
tcEnvTypeId	tinyint	Unique Trucost numerical identifier for the environment type.

*dataItemId by tcEnvTypeId and tcEnvType**

dataItemId	tcEnvTypeId	tcEnvType
319522	1	Trucost Environmental Data
319523	4	Trucost Sector Revenue Data
319482	2	Trucost Fossil Fuels and Energy Data
319483	3	Trucost Sector Fossil Fuels and Energy Data
319498	2	Trucost Fossil Fuels and Energy Data
319499	3	Trucost Sector Fossil Fuels and Energy Data
319496	2	Trucost Fossil Fuels and Energy Data
319497	3	Trucost Sector Fossil Fuels and Energy Data
319512	2	Trucost Fossil Fuels and Energy Data
319513	3	Trucost Sector Fossil Fuels and Energy Data
319486	2	Trucost Fossil Fuels and Energy Data
319487	3	Trucost Sector Fossil Fuels and Energy Data
319502	2	Trucost Fossil Fuels and Energy Data
319503	3	Trucost Sector Fossil Fuels and Energy Data
319492	2	Trucost Fossil Fuels and Energy Data

*Partial presentation of results

tcSector

The **tcSector** table provides reference data on industry classification codes, including NAICS.

In addition, the tcSector table contains a sector hierarchy which enables you to group Trucost sector business activities:

- Level 3 is the lowest level in the hierarchy
- Level 2 is the middle level in the hierarchy
- Level 1 is the top level in the hierarchy

You can recreate this roll-up by linking the level 3 codes to associated level 2 and 1 codes/names.

For details on how to map Trucost sectors to their business activities, click [here](#).

tcSector	
PK	<u>tcSectorId</u>
	tcSectorName

file: tcSector.txt

Table 10. tcSector fields

Column Name	Data Type	Description
tcSectorId	nvarchar(11)	Trucost-modified NAICS code
tcSectorName	varchar(255)	Name for the Trucost modified NAICS code (These are mostly NAICS codes; some additional codes that are not NAICS were created by Trucost.)

*tcSectorId by tcSectorName**

tcSectorId	tcSectorName
1111A0	Oilseed farming
1111B0	Grain farming
111200	Vegetable and melon farming
1113A0	Fruit farming
111335	Tree nut farming
111400	Greenhouse, nursery, and floriculture production
111910	Tobacco farming
111920	Cotton farming
1119A0	Sugarcane and sugar beet farming
1119B0	All other crop farming
1121A0	Cattle ranching and farming
112120	Dairy cattle and milk production
112A00	Animal production, except cattle and poultry and eggs

*Partial presentation of results

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Sample Queries

This section provides sample queries and solutions using Trucost data.

Sample queries are provided in order to demonstrate table relationships and business rules. The sample results reflect the database as it was at a specific point in time. Results may vary if you run the query at a later date. Also note that sample queries may reflect data in other packages that may not be included in your subscription. Please feel free to optimize the queries for best performance based on your use case.

Sample query #1

Identify all the data items delivered in the Trucost Environmental data packages

```
select tcd.*, tcde.tcenvtype
from tcdataitem tcd
join tcDataItemToEnvType tcde on tcdte.dataitemid = tcd.dataitemid
join tcEnvType tcde on tcde.tcenvtypeid = tcdte.tcenvtypeid
where tcdte.tcenvtypeid in (1,2,3,4)
order by tcde.tcenvtype
```

View the results⁵

dataItemId	dataItemName	dataItemDefinition	magnitude	isText	tcenvtype
319380	Absolute: Air Pollutants Direct Cost	External cost of pollutants released to air by the consumption of fossil fuels and production processes which are owned or controlled by the company. The external cost is an estimate of the value of a service based on the cost of damage that results from its loss. It is based on the assumption that the cost of maintaining an environmental benefit is a reasonable estimate of its value.	\$M	0	Trucost Environmental Data

⁵ Partial presentation of results

dataItemId	dataItemName	dataItemDefinition	magnitude	isText	tcenvtype
319381	Impact Ratio: Air Pollutants Direct Cost	External cost of pollutants released to air by the consumption of fossil fuels and production processes which are owned or controlled by the company as a percentage of the company's revenue. The external cost is an estimate of the value of a service based on the cost of damage that results from its loss. It is based on the assumption that the cost of maintaining an environmental benefit is a reasonable estimate of its value.	%	0	Trucost Environmental Data
319382	Absolute: Air Pollutants Indirect Cost	External cost of pollutants released to air by the consumption of fossil fuels and production processes in the supply chain. The external cost is an estimate of the value of a service based on the cost of damage that results from its loss. It is based on the assumption that the cost of maintaining an environmental benefit is a reasonable estimate of its value.	\$M	0	Trucost Environmental Data

dataItemId	dataItemName	dataItemDefinition	magnitude	isText	tcenvtype
319383	Impact Ratio: Air Pollutants Indirect Cost	<p>External cost of pollutants released to air by the consumption of fossil fuels and production processes in the supply chain as a percentage of the company's revenue. The external cost is an estimate of the value of a service based on the cost of damage that results from its loss. It is based on the assumption that the cost of maintaining an environmental benefit is a reasonable estimate of its value.</p>	%	0	Trucost Environmental Data
319384	Absolute: Air Pollutants Direct & Indirect Cost	<p>External cost of direct and indirect air pollutants. The external cost is an estimate of the value of a service based on the cost of damage that results from its loss. It is based on the assumption that the cost of maintaining an environmental benefit is a reasonable estimate of its value.</p>	\$M	0	Trucost Environmental Data

dataItemId	dataItemName	dataItemDefinition	magnitude	isText	tcenvtype
319385	Impact Ratio: Air Pollutants Direct & Indirect Cost	External cost of direct and indirect air pollutants as a percentage of the company's revenue. The external cost is an estimate of the value of a service based on the cost of damage that results from its loss. It is based on the assumption that the cost of maintaining an environmental benefit is a reasonable estimate of its value.	%	0	Trucost Environmental Data
319405	Intensity: GHG Direct & First Tier Indirect	Greenhouse gas (GHG) emissions over which the company has control (Direct + First Tier indirect divided by the company's revenue	tCO2e/\$M	0	Trucost Environmental Data
319406	Intensity: GHG First Tier Indirect	Greenhouse gas (GHG) emissions from direct suppliers divided by the company's revenue. The most significant sources are typically purchased electricity (Scope 2 of the GHG Protocol) and employee's business air travel.	tCO2e/\$M	0	Trucost Environmental Data

dataItemId	dataItemName	dataItemDefinition	magnitude	isText	tcenvtype
319407	Intensity: GHG Scope 1	Greenhouse gas (GHG) emissions from sources that are owned or controlled by the company (categorised by the Greenhouse Gas Protocol) divided by the company's revenue	tCO2e/\$M	0	Trucost Environmental Data
319408	Intensity: GHG Scope 2	Greenhouse gas (GHG) emissions from consumption of purchased electricity, heat or steam by the company (categorised by the Greenhouse Gas Protocol) divided by the company's revenue	tCO2e/\$M	0	Trucost Environmental Data
319409	Intensity: GHG Scope 3 Upstream	Greenhouse gas (GHG) emissions from other upstream activities not covered in Scope 2 (categorised by the Greenhouse Gas Protocol) divided by the company's revenue	tCO2e/\$M	0	Trucost Environmental Data
319410	Absolute: GHG Direct	Greenhouse gas (GHG) emissions generated from burning fossil fuels and production processes which are owned or controlled by the company	tCO2e	0	Trucost Environmental Data
319411	Absolute: GHG Direct & First Tier Indirect	Greenhouse gas (GHG) emissions over which the company has control (Direct + First Tier indirect)	tCO2e	0	Trucost Environmental Data

dataItemId	dataItemName	dataItemDefinition	magnitude	isText	tcenvtype
319412	Absolute: GHG First Tier Indirect	Greenhouse gas (GHG) emissions from direct suppliers. The most significant sources are typically purchased electricity (Scope 2 of the GHG Protocol) and employee's business air travel.	tCO2e	0	Trucost Environmental Data
319413	Absolute: Greenhouse Gases Scope 1	Greenhouse gas (GHG) emissions from sources that are owned or controlled by the company (categorised by the Greenhouse Gas Protocol)	tCO2e	0	Trucost Environmental Data

Sample query #2

Compare a company's carbon footprint (intensity) within the same GICS industry to assess relative carbon efficiency over the course of a financial year

```

SELECT comp.companyName
,tp.institutionId
,s.GIC
,st.subTypeValue as 'GICS Descriptor'
,tp.fiscalYear
--,tp.tcPrimarySectorId
--,ts.tcSectorName
,tdi.DataItemName
,tpd.DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=cast(ccr.identifierValue as int)
join ciqCompany comp (nolock) on comp.companyId = ccr.companyId
JOIN ciqCompanyIndustry ci ON ccr.companyId=ci.companyId
join ciqSubTypeToGICS s on s.subTypeId = ci.industryId
join ciqSubType st on st.subTypeId = ci.industryId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
JOIN tcSector ts ON tp.tcPrimarySectorId=ts.tcSectorId
WHERE tpd.DataItemId in (319407,319408,319409,319406,319405) and ccr.identifierTypeId = 9458 and ccr.primaryFlag
= 1
AND tp.fiscalYear=2016
AND s.GIC in
(SELECT distinct GIC from tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=cast(ccr.identifierValue as int)
JOIN ciqCompanyIndustry ci ON ccr.companyId=ci.companyId
join ciqSubTypeToGICS s on s.subTypeId = ci.industryId
join ciqSubType st on st.subTypeId = ci.industryId
where tp.institutionId=4006321
and ccr.identifierTypeId = 9458 and ccr.primaryFlag = 1
)--American Electric Power Company, Inc.--4226974

--ORDER BY sc.institutionName, tdi.DataItemName
ORDER BY tdi.DataItemName, comp.companyName
    
```

Review the results⁶

companyName	institutionId	GIC	GICS Descriptor	fiscalYear	DataItemName	DataItemValue	magnitude
Acciona, S.A.	4147764	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	246.6099614	tCO2e/\$M
Adani Transmission Limited	5001143	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	60.94113397	tCO2e/\$M
Admie Holding S.A.	10421857	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	184.26652	tCO2e/\$M
ALLETE, Inc.	4022309	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	6052.112231	tCO2e/\$M
Alliant Energy Corporation	4057038	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	6968.998807	tCO2e/\$M
Alupar Investimento S.A.	5001275	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	148.136885	tCO2e/\$M
amaysim Australia Limited	4999830	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	25.7928008	tCO2e/\$M
American Electric Power Company, Inc.	4006321	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	7108.640411	tCO2e/\$M
AusNet Services Ltd	5001152	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	1383.043529	tCO2e/\$M
Avangrid, Inc.	4057045	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	254.6934114	tCO2e/\$M
BKW AG	5001234	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	402.6720834	tCO2e/\$M
CELSIA S.A. E.S.P.	5001184	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	2166.07472	tCO2e/\$M
Centrais Elétricas Brasileiras S.A. - Eletrobrás	4308632	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	541.2228858	tCO2e/\$M
CESC Limited	4509614	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	5444.632055	tCO2e/\$M

⁶ Partial presentation of results

companyName	institutionId	GIC	GICS Descriptor	fiscalYear	DataItemName	DataItemValue	magnitude
CEZ, a. s.	5001206	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	3963.419459	tCO2e/\$M

Sample query #3

Assess companies' trend over time of absolute carbon emissions, or carbon intensity on a sector- and/or country-level, to determine which companies are driving their emissions down while still growing revenues

```

SELECT comp.companyName
,tp.institutionId
,tp.fiscalYear
,tp.tcPrimarySectorId
,ts.tcSectorName,
cg.country
,tdi.DataItemName
,tpd.DataItemValue
,tdi.magnitude
FROM tcPeriod tp
join ciqCompanyCrossRef ccr (nolock)
    on tp.institutionId = cast( ccr.identifierValue as int)
join ciqCompany comp (nolock)
    on comp.companyId = ccr.companyId
join ciqCountryGeo cg (nolock)
    on cg.countryId = comp.countryId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
JOIN tcSector ts ON tp.tcPrimarySectorId=ts.tcSectorId
WHERE tpd.DataItemId in (319407,319408,319409,319522)
and ccr.identifierTypeid = 9458 and ccr.primaryFlag = 1
--AND sctd.dataItemValue='US'
--AND tcPrimarySectorId='212111'

```

View the results⁷

companyName	institutionId	fiscalYear	tcPrimarySectorId	tcSectorName	country	DataItemName	DataItemValue	magnitude
The Chiba Bank, Ltd.	4262442	2018	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 1	0.857311364	tCO2e/\$M

⁷ Partial presentation of results

companyName	institutionId	fiscalYear	tcPrimarySectorId	tcSectorName	country	DataltemName	DataltemValue	magnitude
The Chiba Bank, Ltd.	4262442	2018	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 2	1.127004518	tCO2e/\$M
The Chiba Bank, Ltd.	4262442	2018	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 3 Upstream	23.87136676	tCO2e/\$M
The Chiba Bank, Ltd.	4262442	2018	52A000	Monetary authorities and depository credit intermediation	Japan	Company Revenue	1941.9509	\$M
Banque Internationale Arabe de Tunisie Société anonyme	4392407	2017	52A000	Monetary authorities and depository credit intermediation	Tunisia	Intensity: GHG Scope 1	0.944438519	tCO2e/\$M
Banque Internationale Arabe de Tunisie Société anonyme	4392407	2017	52A000	Monetary authorities and depository credit intermediation	Tunisia	Intensity: GHG Scope 2	1.143813058	tCO2e/\$M
Banque Internationale Arabe de Tunisie Société anonyme	4392407	2017	52A000	Monetary authorities and depository credit intermediation	Tunisia	Intensity: GHG Scope 3 Upstream	24.80681181	tCO2e/\$M
Banque Internationale Arabe de Tunisie Société anonyme	4392407	2017	52A000	Monetary authorities and depository credit intermediation	Tunisia	Company Revenue	291.1717	\$M
FB Financial Corporation	1019856	2017	52A000	Monetary authorities and depository credit intermediation	United States	Intensity: GHG Scope 1	0.980068571	tCO2e/\$M
FB Financial Corporation	1019856	2017	52A000	Monetary authorities and depository credit intermediation	United States	Intensity: GHG Scope 2	3.487101643	tCO2e/\$M
FB Financial Corporation	1019856	2017	52A000	Monetary authorities and depository credit intermediation	United States	Intensity: GHG Scope 3 Upstream	27.12600578	tCO2e/\$M

companyName	institutionId	fiscalYear	tcPrimarySectorId	tcSectorName	country	DataItemName	DataItemValue	magnitude
FB Financial Corporation	1019856	2017	52A000	Monetary authorities and depository credit intermediation	United States	Company Revenue	295.52	\$M
Australia and New Zealand Banking Group Limited	4050465	2018	52A000	Monetary authorities and depository credit intermediation	Australia	Intensity: GHG Scope 1	1.114656674	tCO2e/\$M
Australia and New Zealand Banking Group Limited	4050465	2018	52A000	Monetary authorities and depository credit intermediation	Australia	Intensity: GHG Scope 2	9.492472228	tCO2e/\$M
Australia and New Zealand Banking Group Limited	4050465	2018	52A000	Monetary authorities and depository credit intermediation	Australia	Intensity: GHG Scope 3 Upstream	29.19695877	tCO2e/\$M

Sample query #4

Identify companies that derive revenues from coal-based activities to isolate portfolio exposure to transition risks

```

SELECT sc.institutionName
,tp.institutionId
,sctd.dataItemValue as Country
,tp.fiscalYear
--,tp.tcPrimarySectorId
--,ts.tcSectorName
,tdi.DataItemName
,tpd.DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN snlcorp sc ON tp.institutionId=sc.institutionId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
JOIN snlCorpTextData sctd ON tp.institutionId=sctd.institutionId AND sctd.dataItemId=130508
--JOIN tcSector ts ON tp.tcPrimarySectorId=ts.tcSectorId
WHERE
tpd.DataItemId in (319388,319390,319433)
--AND sc.institutionId=4333358--China Coal Energy Company Limited
--AND tp.fiscalYear BETWEEN 2015 AND 2017
and tp.fiscalYear =2005
ORDER BY tdi.dataItemName, tpd.DataItemValue desc
--ORDER BY sc.institutionName, tdi.dataItemName,tp.fiscalYear

AND tp.fiscalYear=2017
ORDER BY tdi.dataItemName, tpd.DataItemValue desc
--ORDER BY sc.institutionName, tdi.dataItemName,tp.fiscalYear

```

View the results⁸

institutionName	institutionId	Country	fiscalYear	DataItemName	DataItemValue	magnitude
ATH Resources Plc	4230219	GB	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	100.00	%
New Hope Corporation Limited	4229700	AU	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	100.00	%

⁸ Partial presentation of results

institutionName	institutionId	Country	fiscalYear	DataltemName	DataltemValue	magnitude
Yancoal Resources Limited	4414747	AU	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	100.00	%
PT Indo Tambangraya Megah Tbk.	4351217	ID	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	99.00	%
PT Bukit Asam Tbk.	4353496	ID	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	99.00	%
PT BUMI Resources Tbk.	4270224	ID	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	98.99	%
PT Adaro Energy Tbk	4353483	ID	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	94.11	%
Banpu PCL	4348436	TH	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	91.57	%
Arch Coal, Inc.	4098789	US	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	82.80	%
Peabody Energy Corporation	4065857	US	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	75.31	%
Xstrata Limited	4204187	CH	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	42.24	%
Alpha Appalachia Holdings, Inc.	4099043	US	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	32.72	%
Vedanta Limited	4354101	IN	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	26.50	%
Teck Resources Limited	4141965	CA	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	25.09	%
Foundation Coal Holdings, Inc.	4098793	US	2005	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	24.90	%

Sample query #5

Determine which companies own fossil fuel reserves and, therefore, may be holding stranded assets as we transition to a lower-carbon economy

```
(SELECT sc.institutionName
,tp.institutionId
--,sctd.dataItemValue as Country
,tp.fiscalYear
--,tp.tcPrimarySectorId
--,ts.tcSectorName
,tdi.DataItemName
,CAST(tpd.DataItemValue as nvarchar) as DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN snlcorp sc ON tp.institutionId=sc.institutionId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
--JOIN snlCorpTextData sctd ON tp.institutionId=sctd.institutionId AND sctd.dataItemId=130508
--JOIN tcSector ts ON tp.tcPrimarySectorId=ts.tcSectorId
WHERE tpd.DataItemId in (319522
,319484
,319486
,319488
,319490
,319492
,319494
,319496
,319498
,319500
,319502
,319504
,319506
,319508
,319510
,319512
,319514
,319516
,319518
,319520
,319526)
```

```

--AND tp.institutionId=4098789
--and tp.fiscalYear=2017
--and tp.fiscalYear BETWEEN 2015 and 2017
--ORDER BY tpd.DataItemValue desc)
--ORDER BY sc.institutionName, tp.fiscalYear, tdi.dataitemName
)
UNION ALL
(SELECT sc.institutionName
,tp.institutionId
--,sctd.dataItemValue as Country
,tp.fiscalYear
--,tp.tcPrimarySectorId
--,ts.tcSectorName
,tdi.DataItemName
,tpd.DataItemValueText as DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN snlcorp sc ON tp.institutionId=sc.institutionId
JOIN tcPeriodTextData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
--JOIN snlCorpTextData sctd ON tp.institutionId=sctd.institutionId AND sctd.dataItemId=130508
--JOIN tcSector ts ON tp.tcPrimarySectorId=ts.tcSectorId
WHERE tpd.DataItemId in (319579)
--AND tp.institutionId=4098789
--and tp.fiscalYear=2017
--and tp.fiscalYear BETWEEN 2015 and 2017
)
ORDER BY tp.fiscalYear desc, tdi.dataitemName, sc.institutionName
--ORDER BY tdi.dataitemName, DataItemValue desc

```

View the results⁹

institutionName	institutionId	fiscalYear	DataItemName	DataItemValue	magnitude
Adani Enterprises Limited	4347779	2017	Company CO2 Emissions: All Fossil Fuel Reserves	1797.49	M tonnes
ALLETE, Inc.	4022309	2017	Company CO2 Emissions: All Fossil Fuel Reserves	1666.56	M tonnes
Arch Coal, Inc.	4098789	2017	Company CO2 Emissions: All Fossil Fuel Reserves	4824.02	M tonnes

⁹ Partial presentation of results

institutionName	institutionId	fiscalYear	DataItemName	DataItemValue	magnitude
Bathurst Resources Limited	4245766	2017	Company CO2 Emissions: All Fossil Fuel Reserves	50.30	M tonnes
Cabot Oil & Gas Corporation	4010469	2017	Company CO2 Emissions: All Fossil Fuel Reserves	535.57	M tonnes
Callon Petroleum Company	4010473	2017	Company CO2 Emissions: All Fossil Fuel Reserves	55.80	M tonnes
China Coal Xinji Energy Co.,Ltd	4491754	2017	Company CO2 Emissions: All Fossil Fuel Reserves	15041.68	M tonnes
Cloud Peak Energy Inc.	4213860	2017	Company CO2 Emissions: All Fossil Fuel Reserves	2625.21	M tonnes
Comstock Resources, Inc.	4010509	2017	Company CO2 Emissions: All Fossil Fuel Reserves	64.01	M tonnes
CONSOL Energy Inc.	8743250	2017	Company CO2 Emissions: All Fossil Fuel Reserves	5897.00	M tonnes
Evolution Petroleum Corporation	4102200	2017	Company CO2 Emissions: All Fossil Fuel Reserves	4.33	M tonnes
Evrast Plc	4224884	2017	Company CO2 Emissions: All Fossil Fuel Reserves	5911.57	M tonnes
Exco Resources Limited	4350100	2017	Company CO2 Emissions: All Fossil Fuel Reserves	31.82	M tonnes
Geo Energy Resources Limited	4379686	2017	Company CO2 Emissions: All Fossil Fuel Reserves	243.00	M tonnes
Green Leader Holdings Group Limited	4352871	2017	Company CO2 Emissions: All Fossil Fuel Reserves	153.00	M tonnes

Sample query #6

Identify utilities that are poorly positioned in the face of rising carbon prices due to their fossil fuel-heavy energy mix

```

SELECT sc.institutionName
,tp.institutionId
--,sctd.dataItemValue as Country
,tp.fiscalYear
--,tp.tcPrimarySectorId
--,ts.tcSectorName
,tdi.DataItemName
,tpd.DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN snlcorp sc ON tp.institutionId=sc.institutionId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
--JOIN snlCorpTextData sctd ON tp.institutionId=sctd.institutionId AND sctd.dataItemId=130508
--JOIN tcSector ts ON tp.tcPrimarySectorId=ts.tcSectorId
WHERE
--Fossil Fuel related power generation
(tpd.DataItemId in (319429,319471,319475,319453,319457,319461,319451)
--Clean Energy Power Generation
OR tpd.DataItemId in (319528,319571,319573,319443,319435,319386)
--Other Power Generation
OR tpd.DataItemId in (319473))
--AND tp.institutionId=4101540
--AND tp.fiscalYear=2016
AND tp.fiscalYear BETWEEN 2014 and 2017
--ORDER BY tpd.DataItemValue desc
ORDER BY sc.institutionName, tdi.dataItemName, tp.fiscalYear

```

View the results¹⁰

institutionName	institutionId	fiscalYear	DataItemName	DataItemValue	magnitude
Adani Enterprises Limited	4347779	2014	Company Power Generation: Coal	43421.57	GWh
Adani Enterprises Limited	4347779	2015	Company Power Generation: Coal	37570.81	GWh
Adani Enterprises Limited	4347779	2014	Company Power Generation: Solar	202.43	GWh
Adani Enterprises Limited	4347779	2015	Company Power Generation: Solar	143.95	GWh
Adani Power Limited	4274229	2015	Company Power Generation: Coal	54458.35	GWh
Adani Power Limited	4274229	2016	Company Power Generation: Coal	69130.13	GWh
Adani Power Limited	4274229	2017	Company Power Generation: Coal	59960.27	GWh
Adani Power Limited	4274229	2015	Company Power Generation: Solar	208.65	GWh
Adani Power Limited	4274229	2016	Company Power Generation: Solar	264.87	GWh
Adani Power Limited	4274229	2017	Company Power Generation: Solar	229.73	GWh
Alcoa Corporation	4796000	2016	Company Power Generation: Coal	2607.66	GWh
Alcoa Corporation	4796000	2017	Company Power Generation: Coal	1895.68	GWh
Alcoa Corporation	4796000	2016	Company Power Generation: Hydroelectric	6908.91	GWh
Alcoa Corporation	4796000	2017	Company Power Generation: Hydroelectric	5215.77	GWh
Algonquin Power & Utilities Corp.	4142273	2014	Company Power Generation: Hydroelectric	624.20	GWh

¹⁰ Partial presentation of results

Sample query #7**Identify Sector Revenue/Total Revenue**

```

select institutionId, PeriodEndDate, s.tcSectorId, tcSectorName, dataItemName, dataItemValue from tcSectorPeriod p
join tcSectorPeriodData pd on p.sectorPeriodId=pd.sectorPeriodId
join tcDataItem di on pd.dataItemId=di.dataItemId
join tcSector s on p.tcSectorId=s.tcSectorId
where 1=1
and di.dataItemId=319540
and s.tcSectorId in ('221122A','211111A','324110','221122C')
and dataItemValue > 5
and fiscalYear=2019

```

View the results¹¹

institutionId	PeriodEndDate	tcSectorId	tcSectorName	dataItemName	dataItemValue
4057053	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	20.4977654
4157428	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	17.971348
4351103	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	65.73582279
4985615	00:00.0	324110	Petroleum refineries	Sector Revenue/ Total Revenue	48.92118932
4977012	00:00.0	324110	Petroleum refineries	Sector Revenue/ Total Revenue	100
6352783	00:00.0	324110	Petroleum refineries	Sector Revenue/ Total Revenue	100
5000965	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	17.43564999
5000907	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	91.22552129
6676161	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	94.42482817
4379780	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	34.04591883
4976849	00:00.0	324110	Petroleum refineries	Sector Revenue/ Total Revenue	99.81316693
4495628	00:00.0	211111A	Tar Sands Extraction	Sector Revenue/ Total Revenue	11.23827898
6333705	00:00.0	324110	Petroleum refineries	Sector Revenue/ Total Revenue	96.08267003
5001020	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	28.53850396
4157538	00:00.0	221122A	Coal Power Generation	Sector Revenue/ Total Revenue	40.80842997

¹¹ Partial presentation of results

Sample query #8

Identify carbon intensity as company GHG emissions divided by company power generation

-- Company GHG Emissions: All Fossil Fuel Power Generation

DROP TABLE IF EXISTS #Sum_GHG

select * into #Sum_GHG from (

select institutionId, PeriodEndDate, dataItemName, dataItemValue as SUM_GHG ,magnitude from tcPeriod p

join tcPeriodData pd on p.PeriodId=pd.PeriodId

join tcDataItem di on pd.dataItemid=di.dataItemid

where 1=1

and di.dataItemid in (319524)

and fiscalYear=2019)A

-- Sum of all company Power Generation (GWh)

DROP TABLE IF EXISTS #Sum_Power_Generation

select * into #Sum_Power_Generation from (

select institutionId, PeriodEndDate, sum(dataItemValue) as SUM_Power_Generation from tcPeriod p

join tcPeriodData pd on p.PeriodId=pd.PeriodId

join tcDataItem di on pd.dataItemid=di.dataItemid

where 1=1

and di.dataItemid in

(319429,319461,319457,319475,319453,319573,319528,319386,319435,319571,319443,319471,319451,319473)

and fiscalYear=2019

group by institutionId,PeriodEndDate)B

-- Carbon intensity as Company GHG Emissions divided by Company Power Generation

DROP TABLE IF EXISTS #Carbon_intensity

select * into #Carbon_intensity from (

select g.institutionId,

p.PeriodEndDate,SUM_GHG,SUM_Power_Generation,SUM_GHG/NULLIF(SUM_Power_Generation,0) as

Carbon_intensity from #Sum_GHG g

join #Sum_Power_Generation p on g.institutionId=p.institutionId and g.periodEndDate=p.periodEndDate) C

select * from #Carbon_intensity

where Carbon_intensity>408

View the results¹²

institutionId	PeriodEndDate	SUM_GHG	SUM_Power_Generation	Carbon_intensity
4509614	00:00.0	9711780.16	10390	934.723788
4057019	00:00.0	8657483.21	15871	545.490719
4101420	00:00.0	60305593.88	76396.36	789.377843
4350879	00:00.0	1191579.07	1623.3	734.047354
4057053	00:00.0	3133545.79	7406	423.109072
4149664	00:00.0	14552301.32	22297	652.657367
4157451	00:00.0	27532231.09	35346	778.934846
5001058	00:00.0	5651700.03	10007	564.77466
4056944	00:00.0	19663699.95	20195.23	973.680416
4511210	00:00.0	12533642.11	13870	903.651197
5000773	00:00.0	54152559.06	53964	1003.494163
4157516	00:00.0	18844420.73	23310.02	808.425764
4976826	00:00.0	1724992.16	2087	826.541523
4010420	00:00.0	3590126.32	4725.44	759.744345
4649765	00:00.0	461607.32	460	1003.494173

¹² Partial presentation of results

Sample query #9

Identify numeric environmental data for American Electric Power Company, Inc., for the year 2018

-- Environmental data (numeric) of American Electric Power Company, Inc. for the year 2018

```
select comp.companyName,
       a.fiscalYear,
       s.tcSectorName [PrimarySector],
       a.periodEndDate,
       c.dataItemName,
       b.dataItemvalue,
       c.magnitude
from   dbo.tcPeriod a (nolock)
       join dbo.tcSector s (nolock)
         on a.tcPrimarySectorId=s.tcSectorId
       join dbo.tcPeriodData b (nolock)
         on a.periodId=b.periodId
       join dbo.tcDataItem c (nolock)
         on b.dataItemId=c.dataItemId
       join dbo.tcDataItemToEnvType d (nolock)
         on c.dataItemId=d.dataItemId
       join ciqCompanyCrossRef ccr (nolock)
         on a.institutionId = cast(ccr.identifierValue as int)
       join ciqCompany comp (nolock)
         on comp.companyId = ccr.companyId
where  a.institutionid = 4006321
       and a.fiscalyear = 2018
       and d.tcEnvTypeId = 1
       and b.dataItemId in
(326709,326710,326714,326717,326718,326719,326726,326737,326738,327786,327787,327788,
327789,327790,327791,327792,327793,327794,327795,327796,327797,329704)
       and ccr.identifierTypeId = 9458
       and ccr.primaryFlag = 1
```

View the results

companyName	fiscalYear	PrimarySector	periodEndDate	dataItemName	dataItemvalue	magnitude
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: Water Indirect Cooling	88934471.52	m³

companyName	fiscalYear	PrimarySector	periodEndDate	dataItemName	dataItemValue	magnitude
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: Water Indirect Process	86012800.46	m³
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: Cooling, Process, and Purchased	16777881327	m³
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: Water Indirect Cooling	5491.236353	m³/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: Water Indirect Process	5310.838516	m³/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: Cooling, Process, and Purchased / Rev	1035946.021	m³/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Weighted Disclosure: Land and Water	99.89868723	%
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: GHG Scope 3 Downstream	12238459.01	tCO2e
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: GHG Scope 3 Downstream	755.6605428	tonnes/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: Waste Landfill Indirect	3.249542849	tonnes/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: Waste Landfill Direct and Indirect	3.285422471	tonnes/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: Waste Incineration Indirect	0.190020497	tonnes/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: Waste Incineration Direct and Indirect	0.191124413	tonnes/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Intensity: Waste Direct and Indirect	0.002686372	tonnes/\$M
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: Waste Landfill Indirect	52628.65362	tonnes
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: Waste Landfill Direct and Indirect	53209.74956	tonnes
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: Waste Incineration Indirect	3077.516866	tonnes

companyName	fiscalYear	PrimarySector	periodEndDate	dataItemName	dataItemValue	magnitude
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: Waste Incineration Direct and Indirect	3095.395573	tonnes
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Absolute: Waste Direct & Indirect	43.50770714	tonnes
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Weighted Disclosure: Environmental	96.57907549	%

Sample query #10**Identify textual environmental data for American Electric Power Company, Inc., for the year 2018**

-- Environmental data (text) of American Electric Power Company, Inc. for the year 2018

```

select comp.companyName,
       a.fiscalYear,
       s.tcSectorName [PrimarySector],
       a.periodEndDate,
       c.dataItemName,
       b.dataItemValueText,
       c.magnitude
from   dbo.tcPeriod a (nolock)
       join dbo.tcSector s (nolock)
         on a.tcPrimarySectorId=s.tcSectorId
       join dbo.tcPeriodTextData b (nolock)
         on a.periodId=b.periodId
       join dbo.tcDataItem c (nolock)
         on b.dataItemId=c.dataItemId
       join dbo.tcDataItemToEnvType d (nolock)
         on c.dataItemId=d.dataItemId
       join ciqCompanyCrossRef ccr (nolock)
         on a.institutionId = cast(ccr.identifierValue as int)
       join ciqCompany comp (nolock)
         on comp.companyId = ccr.companyId
where  a.institutionid = 4006321
       and a.fiscalyear = 2018
       and d.tcEnvTypeid = 1
       and b.dataItemId in
(326727,326728,326729,326730,329688,329689,329692,329693,329694,329697,329698,329699,329700,329701,32970
2,329703)
       and ccr.identifierTypeid = 9458
       and ccr.primaryFlag = 1

```

View the results

companyName	fiscalYear	PrimarySector	periodEndDate	dataItemName	dataItemValueText	magnitude
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Water-Direct Cooling Disclosure	Estimated data	NULL

companyName	fiscalYear	PrimarySector	periodEndDate	dataItemName	dataItemValueText	magnitude
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Water-Direct Process Disclosure	Estimate used instead of disclosure - data does not cover global operations	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Scope 3 Downstream Carbon Dioxide Disclosure	Estimated data	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Carbon Scope 3 Downstream Cost Calculation As Of	4/2/2020	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Scope 2 Carbon Dioxide Disclosure	Exact Value from CDP	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Carbon Scope 3 Air Transportation Disclosure	Derived from previous year	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Carbon Scope 3 Rail Transportation Disclosure	Estimated data	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Carbon Scope 3 Truck Transportation Disclosure	Estimated data	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Waste Landfill Hazardous Disclosure	Derived from previous year	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Waste Landfill Non-Hazardous Disclosure	Derived from previous year	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Waste Incineration Non-Hazardous Disclosure	Derived from previous year	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Waste Nuclear Disclosure	Estimated data	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Waste Recycled Hazardous Disclosure	Derived from previous year	NULL
American Electric Power Company, Inc.	2018	Coal Power Generation	12/31/2018	Waste Recycled Non-Hazardous Disclosure	Derived from previous year	NULL

Sample query #11**Determine a company's carbon footprint**

```

SELECT comp.companyName
,tp.institutionId
,s.GIC
,st.subTypeValue as 'GICS Descriptor'
,tp.fiscalYear
,tdi.DataItemName
,tpd.DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=ccr.identifierValue
    AND ccr.identifiertypeid = 9458
JOIN ciqCompany comp ON ccr.companyId = comp.companyId
JOIN ciqCompanyIndustry ci ON ccr.companyId=ci.companyId
join ciqSubTypeToGICS s on s.subTypeId = ci.industryId
join ciqSubType st on st.subTypeId = ci.industryId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
JOIN tcSector ts ON tp.tcPrimarySectorId=ts.tcSectorId
WHERE tpd.DataItemId in (319407,319408,319409,319406,319405)
AND tp.institutionId=4006321 --American Electric Power Company, Inc.--4226974
AND tp.fiscalYear=2016
AND ccr.primaryFlag = 1
AND s.GIC in
(SELECT distinct GIC from tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=ccr.identifierValue
    AND ccr.identifiertypeid = 9458
JOIN ciqCompanyIndustry ci ON ccr.companyId=ci.companyId
join ciqSubTypeToGICS s on s.subTypeId = ci.industryId
join ciqSubType st on st.subTypeId = ci.industryId
where tp.institutionId=4006321
AND ccr.primaryFlag = 1)
ORDER BY tdi.DataItemName, comp.companyName

```

Review the results

companyName	institutionId	GIC	GICS Descriptor	fiscalYear	DataltemName	DataltemValue	magnitude
American Electric Power Company, Inc.	4006321	55101010	Electric Utilities	2016	Intensity: GHG Direct & First Tier Indirect	7108.640411	tCO2e/\$M
American Electric Power Company, Inc.	4006321	55101010	Electric Utilities	2016	Intensity: GHG First Tier Indirect	1054.443564	tCO2e/\$M
American Electric Power Company, Inc.	4006321	55101010	Electric Utilities	2016	Intensity: GHG Scope 1	6054.196847	tCO2e/\$M
American Electric Power Company, Inc.	4006321	55101010	Electric Utilities	2016	Intensity: GHG Scope 2	684.8664835	tCO2e/\$M
American Electric Power Company, Inc.	4006321	55101010	Electric Utilities	2016	Intensity: GHG Scope 3 Upstream	452.9401284	tCO2e/\$M

Sample query #12**Identify companies most heavily exposed to coal-related business activities**

```

SELECT comp.companyName
,tp.institutionId
,cg.country
,tp.fiscalYear
,tdi.DataItemName
,tpd.DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=ccr.identifierValue
AND ccr.identifiertypeid = 9458
JOIN ciqCompany comp ON ccr.companyId = comp.companyId
JOIN ciqCountryGeo cg ON comp.countryId = cg.countryId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
WHERE tpd.DataItemId in (319388,319390,319433)
AND ccr.primaryFlag = 1
AND tp.fiscalYear=2017
ORDER BY tdi.dataItemName, tpd.DataItemValue desc

```

View the results¹³

companyName	institutionId	country	fiscalYear	DataItemName	DataItemValue	magnitude
Mongolian Mining Corporation	4289945	Mongolia	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	100	%
Bathurst Resources Limited	4245766	New Zealand	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	100	%
Mongolia Energy Corporation Limited	4260031	Hong Kong	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	100	%
PT Delta Dunia Makmur Tbk	4978857	Indonesia	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	100	%
Geo Energy Resources Limited	4379686	Singapore	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	98.29814006	%
PT Indo Tambangraya Megah Tbk	4351217	Indonesia	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	98.27762241	%

¹³ Partial presentation of results

companyName	institutionId	country	fiscalYear	DataItemName	DataItemValue	magnitude
PT Bukit Asam Tbk	4353496	Indonesia	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	98.05091142	%
New Hope Corporation Limited	4229700	Australia	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	97.78669471	%
PT Harum Energy Tbk	4350954	Indonesia	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	96.49370178	%
Westmoreland Coal Company	4063977	United States	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	94.50521751	%
Coal India Limited	4270283	India	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	94.31966665	%
PT Adaro Energy Tbk	4353483	Indonesia	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	93.32775379	%
Public Joint Stock Company "Kuzbasskaya Toplivnaya Company"	4351708	Russia	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	90.40401428	%
Peabody Energy Corporation	4065857	United States	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	90.24628952	%
NACCO Industries, Inc.	4153416	United States	2017	Bitumns and Lignit Surface Coal Mng Rev/ Total Rev	87.81232702	%

Sample query #13**Identify companies impacted by stranded assets due to proven or probable fossil fuel reserves**

```

(SELECT comp.companyName
,tp.institutionId
,tp.fiscalYear
,tdi.DataItemName
,CASE (tpd.DataItemValue as nvarchar) as DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=ccr.identifierValue
AND ccr.identifiertypeid = 9458
JOIN ciqCompany comp ON ccr.companyId = comp.companyId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
WHERE tpd.DataItemId in
(319522,319484,319486,319488,319490,319492,319494,319496,319498,319500,319502,319504
,319506,319508,319510,319512,319514,319516,319518,319520,319526)
AND ccr.primaryFlag = 1
)
UNION ALL
(SELECT comp.companyName
,tp.institutionId
,tp.fiscalYear
,tdi.DataItemName
,tpd.DataItemValueText as DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=ccr.identifierValue
AND ccr.identifiertypeid = 9458
JOIN ciqCompany comp ON ccr.companyId = comp.companyId
JOIN tcPeriodTextData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
WHERE tpd.DataItemId in (319579)
and ccr.primaryFlag = 1
)
ORDER BY tp.fiscalYear desc, tdi.dataItemName, comp.companyName

```


View the results¹⁴

companyName	institutionId	fiscalYear	DatItemName	DatItemValue	magnitude
AAG Energy Holdings Limited	4980119	2019	Company CO2 Emissions: All Fossil Fuel Reserves	37.57	M tonnes
Abraxas Petroleum Corporation	4010185	2019	Company CO2 Emissions: All Fossil Fuel Reserves	21.6	M tonnes
Advantage Oil & Gas Ltd.	4979441	2019	Company CO2 Emissions: All Fossil Fuel Reserves	159.51	M tonnes
AgriTrade Resources Limited	4379621	2019	Company CO2 Emissions: All Fossil Fuel Reserves	838.46	M tonnes
ALLETE, Inc.	4022309	2019	Company CO2 Emissions: All Fossil Fuel Reserves	1327.35	M tonnes
Anglo American plc	4193273	2019	Company CO2 Emissions: All Fossil Fuel Reserves	6847.04	M tonnes
Anhui Hengyuan Coal-Electricity Group Co., Ltd.	4978886	2019	Company CO2 Emissions: All Fossil Fuel Reserves	2579.73	M tonnes
Apache Corporation	4010203	2019	Company CO2 Emissions: All Fossil Fuel Reserves	378.56	M tonnes
ArcelorMittal	4348116	2019	Company CO2 Emissions: All Fossil Fuel Reserves	1229.52	M tonnes
Arch Resources, Inc.	4098789	2019	Company CO2 Emissions: All Fossil Fuel Reserves	12775.8	M tonnes
Athabasca Oil Corporation	4281646	2019	Company CO2 Emissions: All Fossil Fuel Reserves	409.32	M tonnes
Bathurst Resources Limited	4245766	2019	Company CO2 Emissions: All Fossil Fuel Reserves	133.94	M tonnes
Battalion Oil Corporation	4147810	2019	Company CO2 Emissions: All Fossil Fuel Reserves	23.68	M tonnes
Beach Energy Limited	4356908	2019	Company CO2 Emissions: All Fossil Fuel Reserves	105.92	M tonnes

¹⁴ Partial presentation of results

Sample query #14**Identify the carbon trend on a sector- or country-level**

```

SELECT comp.companyName
,tp.institutionId
,tp.fiscalYear
,tp.tcPrimarySectorId
,ts.tcSectorName
,cg.country
,tdi.DataItemName
,tpd.DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=ccr.identifierValue
AND ccr.identifiertypeid = 9458
JOIN ciqCompany comp ON ccr.companyId = comp.companyId
JOIN ciqCountryGeo cg ON comp.countryId = cg.countryId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
JOIN tcSector ts ON tp.tcPrimarySectorId=ts.tcSectorId
WHERE tpd.DataItemId in (319407,319408,319409,319522)
and ccr.primaryFlag = 1

```

View the results¹⁵

companyName	institutionId	fiscalYear	tcPrimarySectorId	tcSectorName	country	DataItemName	DataItemValue	magnitude
The Chiba Bank, Ltd.	4262442	2018	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 1	0.857311364	tCO2e/\$M
The Chiba Bank, Ltd.	4262442	2018	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 2	1.127004518	tCO2e/\$M

¹⁵ Partial presentation of results

companyName	institutionId	fiscalYear	tcPrimarySectorId	tcSectorName	country	DatalItemName	DatalItemValue	magnitude
The Chiba Bank, Ltd.	4262442	2018	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 3 Upstream	23.87136676	tCO2e/\$M
The Chiba Bank, Ltd.	4262442	2018	52A000	Monetary authorities and depository credit intermediation	Japan	Company Revenue	1941.9509	\$M
The Daishi Bank, Ltd.	4263647	2013	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 1	2.423550244	tCO2e/\$M
The Daishi Bank, Ltd.	4263647	2013	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 2	2.619701533	tCO2e/\$M
The Daishi Bank, Ltd.	4263647	2013	52A000	Monetary authorities and depository credit intermediation	Japan	Intensity: GHG Scope 3 Upstream	29.26553862	tCO2e/\$M
The Daishi Bank, Ltd.	4263647	2013	52A000	Monetary authorities and depository credit intermediation	Japan	Company Revenue	1183.109277	\$M
Beter Bed Holding N.V.	4916991	2014	442000	Furniture and Home Furnishings Stores	Netherlands	Intensity: GHG Scope 1	23.86452523	tCO2e/\$M
Beter Bed Holding N.V.	4916991	2014	442000	Furniture and Home Furnishings Stores	Netherlands	Intensity: GHG Scope 2	24.255149	tCO2e/\$M
Beter Bed Holding N.V.	4916991	2014	442000	Furniture and Home Furnishings Stores	Netherlands	Intensity: GHG Scope 3 Upstream	60.09953164	tCO2e/\$M

companyName	institutionId	fiscalYear	tcPrimarySectorId	tcSectorName	country	DataltemName	DataltemValue	magnitude
Beter Bed Holding N.V.	4916991	2014	442000	Furniture and Home Furnishings Stores	Netherlands	Company Revenue	482.76	\$M
MetLife, Inc.	4051708	2005	524100	Insurance carriers	United States	Intensity: GHG Scope 1	0.316342388	tCO2e/\$M
MetLife, Inc.	4051708	2005	524100	Insurance carriers	United States	Intensity: GHG Scope 2	2.331794526	tCO2e/\$M

Sample query #15**Identify a company's energy mix**

```

SELECT comp.companyName
,tp.institutionId
,tp.fiscalYear
,tdi.DataItemName
,tpd.DataItemValue
,tdi.magnitude
FROM tcPeriod tp
JOIN ciqCompanyCrossRef ccr ON tp.institutionId=ccr.identifierValue
AND ccr.identifiertypeid = 9458
JOIN ciqCompany comp ON ccr.companyId = comp.companyId
JOIN tcPeriodData tpd ON tp.PeriodId=tpd.PeriodId
JOIN tcDataItem tdi ON tpd.dataItemId=tdi.DataItemId
WHERE
--Fossil Fuel related power generation
(tpd.DataItemId in (319429,319471,319475,319453,319457,319461,319451)
--Clean Energy Power Generation
OR tpd.DataItemId in (319528,319571,319573,319443,319435,319386)
--Other Power Generation
OR tpd.DataItemId in (319473))
AND tp.fiscalYear BETWEEN 2014 and 2017
ORDER BY comp.companyName, tdi.dataItemName, tp.fiscalYear

```

View the results¹⁶

companyName	institutionId	fiscalYear	DataItemName	DataItemValue	magnitude
A2A S.p.A.	4346780	2014	Company Power Generation: Biomass	1095	GWh
A2A S.p.A.	4346780	2015	Company Power Generation: Biomass	979	GWh
A2A S.p.A.	4346780	2016	Company Power Generation: Biomass	1714	GWh
A2A S.p.A.	4346780	2017	Company Power Generation: Biomass	1514	GWh
A2A S.p.A.	4346780	2014	Company Power Generation: Coal	3234	GWh
A2A S.p.A.	4346780	2015	Company Power Generation: Coal	3529	GWh

¹⁶ Partial presentation of results

companyName	institutionId	fiscalYear	DataItemName	DataItemValue	magnitude
A2A S.p.A.	4346780	2016	Company Power Generation: Coal	3435	GWh
A2A S.p.A.	4346780	2017	Company Power Generation: Coal	2001	GWh
A2A S.p.A.	4346780	2014	Company Power Generation: Geothermal	461	GWh
A2A S.p.A.	4346780	2015	Company Power Generation: Geothermal	462	GWh
A2A S.p.A.	4346780	2016	Company Power Generation: Geothermal	568	GWh
A2A S.p.A.	4346780	2017	Company Power Generation: Geothermal	688	GWh
A2A S.p.A.	4346780	2014	Company Power Generation: Hydroelectric	7810	GWh
A2A S.p.A.	4346780	2015	Company Power Generation: Hydroelectric	6191	GWh
A2A S.p.A.	4346780	2016	Company Power Generation: Hydroelectric	6036	GWh
A2A S.p.A.	4346780	2017	Company Power Generation: Hydroelectric	3960	GWh

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Revision History

The changes made to this document include the following:

Version	Date	Changes
1.0	07/09/2019	Initial version
1.1	07/10/2019	Updated schema to show the following relationships: <ul style="list-style-type: none"> tcSectorPeriodData table to tcDataItem table tcSectorPeriodTextData table to tcDataItem table
1.2	04/23/2020	<ul style="list-style-type: none"> Updated the description for <i>reportedCurrency/ISOCode</i> in the tcPeriod (tcPeriod.txt) and tcSectorPeriod (tcSectorPeriod.txt) tables to indicate that currency values are currently reported in USD. Updated the copyright page.
	05/01/2020	<ul style="list-style-type: none"> Added information indicating the tcSector table contains a sector hierarchy which enables users to group Trucost sector business activities. A link to the spreadsheet with details on the mapping of Trucost sectors to their business activities was also provided.
	06/01/2020	<ul style="list-style-type: none"> Adjusted the description for the Trucost Environmental Data (TrucostEnvironmentalData) package.
1.3	09/28/2020	<ul style="list-style-type: none"> Added two new sample queries: <ul style="list-style-type: none"> <i>Identify Sector Revenue/Total Revenue</i> <i>Identify carbon intensity as company GHG emissions divided by company power generation</i>

Version	Date	Changes
1.4	10/09/2020	<ul style="list-style-type: none"> • Packages and Populations > Company-level data packages <ul style="list-style-type: none"> ◦ Updated the description for the Trucost Environmental Data (TrucostEnvironmentalData) package. • Added three new sample queries: <ul style="list-style-type: none"> ◦ <i>Identify all the data items delivered in the Trucost Environmental packages</i> ◦ <i>Identify numeric environmental data for American Electric Power Company, Inc., for the year 2018</i> ◦ <i>Identify textual environmental data for American Electric Power Company, Inc., for the year 2018</i>
1.5	10/21/2020	<ul style="list-style-type: none"> • Adjusted the <i>dataItemDefinition</i> for the following <i>dataItemIds</i>: <ul style="list-style-type: none"> ◦ 319482 ◦ 319483 ◦ 319498 ◦ 319499 • Generated new results for sample query #1. • Updated sample queries #2 and #3 and generated new results.
1.6	01/19/2021	<ul style="list-style-type: none"> • Replaced sample queries #2, #3, #4, #9, and #10 with new ones.
1.7	02/02/2021	<ul style="list-style-type: none"> • Restored sample queries #2, #3, #4, #9, and #10. • Added sample queries #11, #12, #13, #14, and #15.

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