



User Guide: Energy Climate Scenario Catalogue

: YVfi Ufm202'

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2.1.2 Introduction

1.1 Purpose

This User Guide focuses on how to access and use the Catalogue and how it is structured.

For further information on the development of the Catalogue, details of the methodologies applied and the application of the Catalogue, please refer to the [Catalogue landing page](#) for further resources.

Please particularly read carefully through the terms of use and disclaimer in the Catalogue (see section 2.1.1) before using the Catalogue and its data.

Throughout this document, concrete examples of use cases are provided in *italicized teal text* as further clarification.

1.2 Background

The Climate Scenario Catalogue (the Catalogue) is designed to be used in association with and to support the Climate Scenario Reference Approach (the Approach) developed by the Energy Forum to enhance climate risk analysis and disclosure. The Approach was developed by the Energy Forum with the WBCSD Project Team to advance the project objectives and intended outcomes, including increasing the quantity and quality of strategic assessment and disclosure based on climate scenario analysis. It provides a yardstick for Forum members to enhance transparency, consistency, and comparability of scenario analysis in response to the Task Force on Climate-Related Financial Disclosures' (TCFD) recommendations.¹

The Approach and the Catalogue follow six guiding principles developed by the Energy Forum:

Simplicity: forum members agreed that they did not want to add to complexity by adding new scenarios to the existing “scenario universe.” Instead, the Project focuses on “reference scenario families”, certain existing scenarios and variables, compiled in a “Catalogue” and their application.

Business relevance: by collating information from different sources and perspectives and providing key transition metrics and variables relevant to business, the Catalogue builds a bridge from scenario conditions to business drivers.

Comprehensiveness: offer an approach to scenario analysis that encourages resilience assessment across a range of possible outcomes, including those that align with the Paris Agreement as well as more ambitious (1.5°C) and BAU scenarios.

¹ TCFD (2021). Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans.

https://assets.bbhub.io/company/sites/60/2021/05/2021-TCFD-Metrics_Targets_Guidance.pdf

Neutrality: considers a range of possible future industry and market developments, options and solutions drawn from public scenarios.

Comparability and transparency: It compares different scenario outcomes transparently.

Ease of interpretation: the reference scenario approach is intended to provide a structured, transparent perspective to scenario analysis, the process and results of which can be more easily interpreted and compared by investors.

1.3 Catalogue overview and features

The Catalogue is a live online repository within which certain public climate scenarios are referred to as “catalogued scenarios”. It is a live tool designed to be updated as new and improved climate scenarios are released over time.

Publicly available scenarios from leading institutions were filtered, categorized and augmented for use in the Catalogue. Based on plausibility constraints (e.g. for bioenergy and carbon capture and storage) scenarios were filtered and categorized into scenario families.

1.3.1 Catalogue features

The Catalogue provides the user with three main features:

Scenario Explorer: shows how selected scenarios compare across key variables in ten year intervals between 2020 and 2050 to present the distribution of scenarios within their family to illustrate the range of uncertainty across those scenarios.

Variable Explorer: presents all variables in the Catalogue in their full sectoral and regional disaggregation.

Data Download: offers extraction of selected variables from the Catalogue for further analysis and disclosure.

1.3.2 Scenario Families

The catalogued scenarios have been grouped into climate reference scenario families (families). The families have been identified and implemented to ensure that users compare scenarios of similar climate ambition when conducting their analyses. These are:

- **Paris Ambitious 1.5°C:** Scenarios with outcomes designed to keep temperature rise within 1.5°C above pre-industrial levels with limited/no overshoot²
- **Paris Aligned Well-Below 2°C:** Scenarios with outcomes designed to keep temperature rise within 2°C above pre-industrial levels with limited/no overshoot

² Overshoot means that temperatures rise above a certain global warming target before falling below it.

- **Current Policies/Business-as-Usual (BAU):** Scenarios that reflect the range of current climate policies and Nationally Determined Contributions (NDCs) or other national pledges, resulting in a temperature rise between 2.5 and 3.5°C by 2100.

A list and description of each scenario within a scenario family is included at the foot of the scenario family page. A full listing of scenarios in the Catalogue is presented in the Forum report and the Technical Documentation.

1.3.3 Catalogue Variables

The Catalogue includes more than 6,000 variables for strategic resilience testing and disclosure, which are either extracted directly from the selected scenarios, or were disaggregated or expanded by Vivid Economics.

The Technical Documentation details the methodology for the additional disaggregated and expanded variables and contains a detailed list of the variables included in the Catalogue.

Further information on how to access the Catalogue and how to use the Catalogue features are presented in the following sections of this User Guide.

2.1.2 User guidance

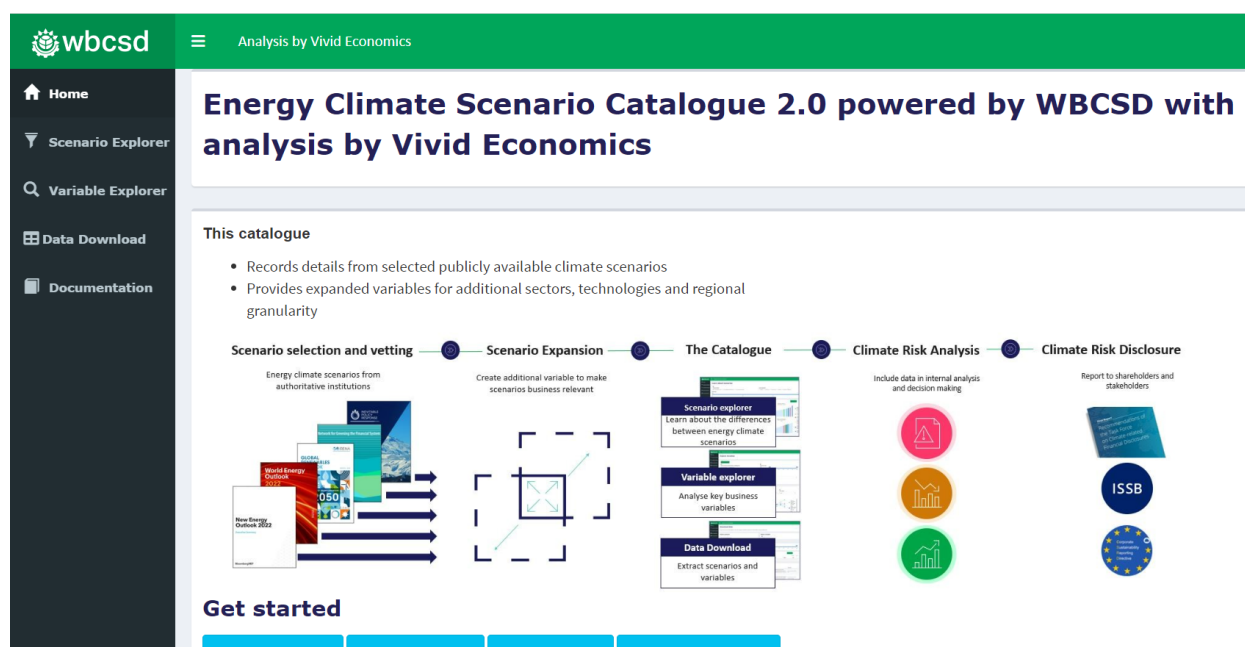
This section describes how to use the Catalogue for scenario comparisons and variable extraction.

2.1 Entering the Catalogue – Home Section

Users enter the Catalogue through the Home section (Figure 1).

The Home section provides an overview of selected scenarios and illustrates the process of creating and using the Catalogue. Users can access other features of the Catalogue through the panel on the left or the blue action buttons at the bottom.

Figure 1 The Home section provides the entry into the Catalogue



2.1.1 Terms of use and Disclaimer

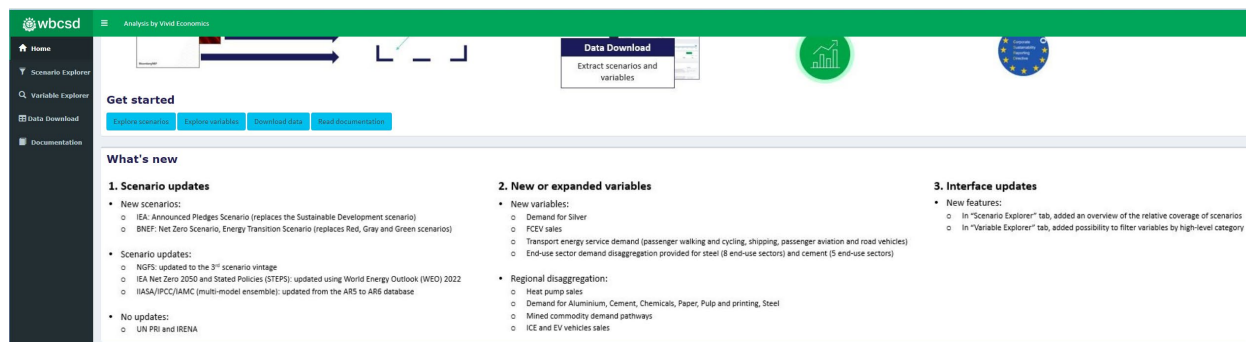
Terms applicable to the use of the Catalogue, the selected scenarios and associated data are presented at the foot of the Home section. These are important to consider to comply with the scenario providers' rules when using their data. Details of the terms of use by scenario provider are also presented in the *Data Availability and Terms of Use* section of the Variable Explorer feature. See section 2.3.9 for further details.

The Home section also specifies WBCSD and Vivid Economics' liability for the content of the Catalogue.

2.1.2. What's New

The “What’s new” box on the main page summarises what is different in version 2.0 of the Catalogue, relative to version 1.0.

Figure 2 The “What’s new” box highlights key updates to the catalogue in v2.0



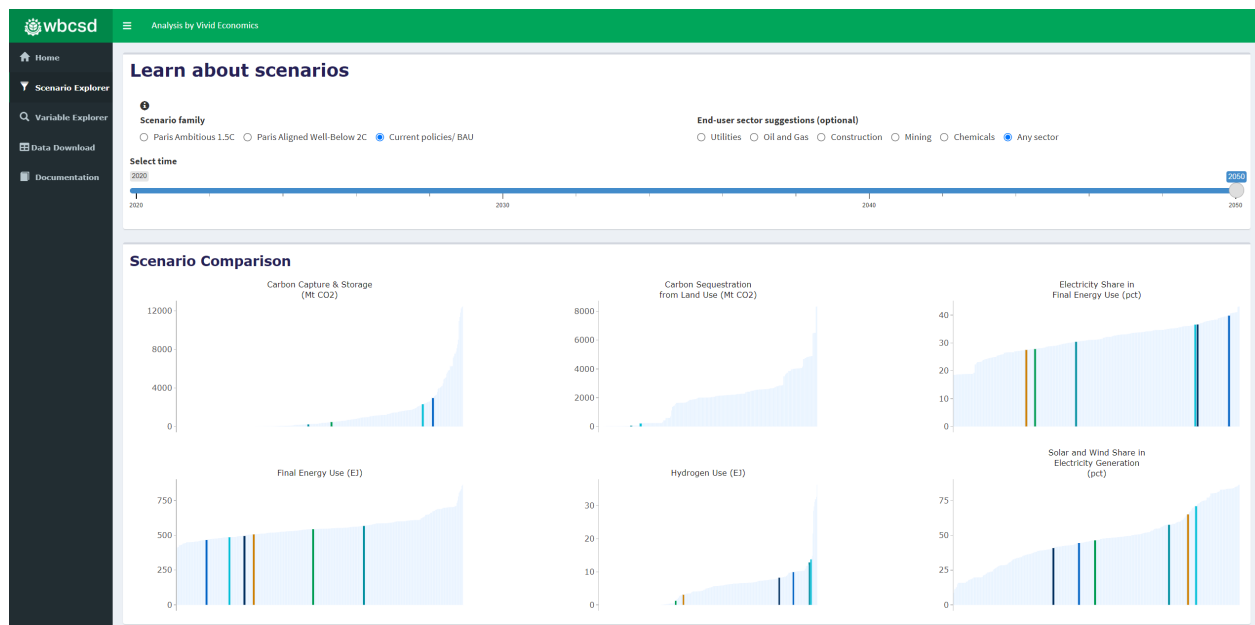
2.2 Scenario Explorer

The Scenario Explorer is a good point to start a strategic resilience assessment. Particularly, it helps to explain and navigate the variety of scenarios in each scenario family and the range of uncertainty in climate impacts. After going through this section, users will have a clearer picture of which scenarios they want to explore in detail.

The Scenario Explorer feature uses a slightly extended dataset than the Variable Explorer and the Data Download features. It includes further scenarios from the AR6 Scenario Explorer and Database, hosted by IIASA, to provide more context on and comparison to available scenarios. It also presents only a small subset of the available variables and none of the expanded or disaggregated variables.

The Scenario Explorer shows how selected scenarios compare across key variables in 10 year intervals from 2020 through to 2050 (Figure 2). It presents the distribution of scenarios within their family and illustrates the range of uncertainty across those scenarios, that is indicative of different assumptions and modelling techniques by scenario developers.

Figure 3 The scenario explorer illustrates differences between scenarios



2.2.1 Exploration by Scenario family, Sector and Time horizon

Scenarios can be explored by scenario family, by sector and by time horizon.

2.2.2 Selecting a scenario family

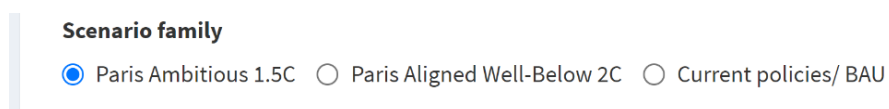
First, the user needs to select a family, by clicking on one of the following options displayed at the top left of the Scenario Explorer page:

- Paris Ambitious 1.5°C
- Paris Aligned Well-Below 2°C
- Current Policies/BAU.

For example, in Figure 3 the Paris Ambitious 1.5°C scenario family is selected.

If a scenario family is not selected, the Paris Ambitious 1.5°C is automatically selected.

Figure 4 Selecting a scenario family



2.2.3 Selecting an end user category

Users can select an end user category to explore variables agreed by the Forum as being most business-relevant to the sector.

The user selects an end user sector by clicking on one of the following options displayed at the top right of the Scenario Explorer page:

- Utilities
- Oil and Gas
- Construction
- Mining
- Chemicals
- Any sector

For example, in Figure 4 the Oil and Gas sector is selected.

Figure 5 Selecting a sector

End-user sector suggestions (optional)

Utilities
 Oil and Gas
 Construction
 Mining
 Chemicals
 Any sector

If the “Any sector” option is selected, the Scenario Explorer displays six key variables (and the projections for them across scenarios in 2050) that are considered by the Forum as most critical to the energy and climate transition and vary widely between scenarios. Table 1 displays the presented variables by sector.

Table 1 Variables by sector

	Any sector	Utilities	Oil and Gas	Construction	Mining	Chemicals
Carbon Capture & Storage	X		X	X	X	X
Carbon Sequestration from Land Use	X					
Electricity Share in Final Energy Use	X	X	X	X		X
Final Energy Use	X	X	X			
Hydrogen Use	X	X				

	Any sector	Utilities	Oil and Gas	Construction	Mining	Chemicals
Solar and Wind Share in Electricity Generation	X	X			X	
Nuclear Share in Electricity Generation		X				
Electricity Share in Transportation			X		X	
Oil Price			X			
Primary Energy from Oil and Gas			X		X	
Final Energy Use from Buildings				X		
Gross Domestic Product (GDP)				X	X	X
Bioenergy Use				X		X
Final Energy Use from Transport					X	X
Agricultural Demand						X

Source: Vivid Economics

For example, let's say you are working for an oil & gas company and select your sector. This removes carbon sequestration from land use from the comparison and adds primary energy supply from oil and gas.

2.2.4 Selecting a time horizon

Users can set the time in 10 year intervals from 2020 at which scenario variables are compared and presented – i.e. as per their values as measured at 2020, 2030, 2040 or 2050.

To set the time, the user moves the button on the sidebar under the *Select time* field to the relevant year or by click on sidebar above the relevant year. For example, in Figure 5, the user has chosen to compare the scenario variables as per their values at 2030.

Figure 6 Selecting a time horizon



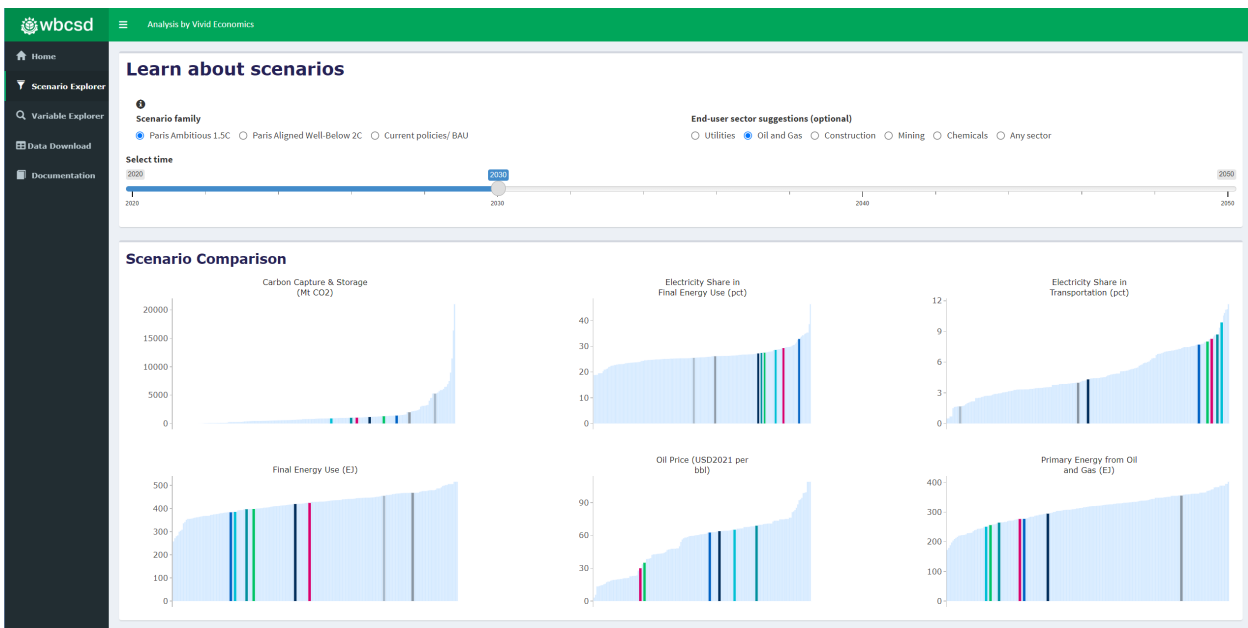
If no time horizon is selected by the user, the time horizon is automatically set to 2050.

Example

Figure 6 illustrates the information presented in the Scenario Explorer feature for a user selecting the following criteria:

Scenario family	Paris Ambitious 1.5°C
Sector	Oil and Gas
Select time	2030

Figure 7 Comparison for Paris Ambitious 1.5°C scenario variables at 2030 for the Oil and Gas sector

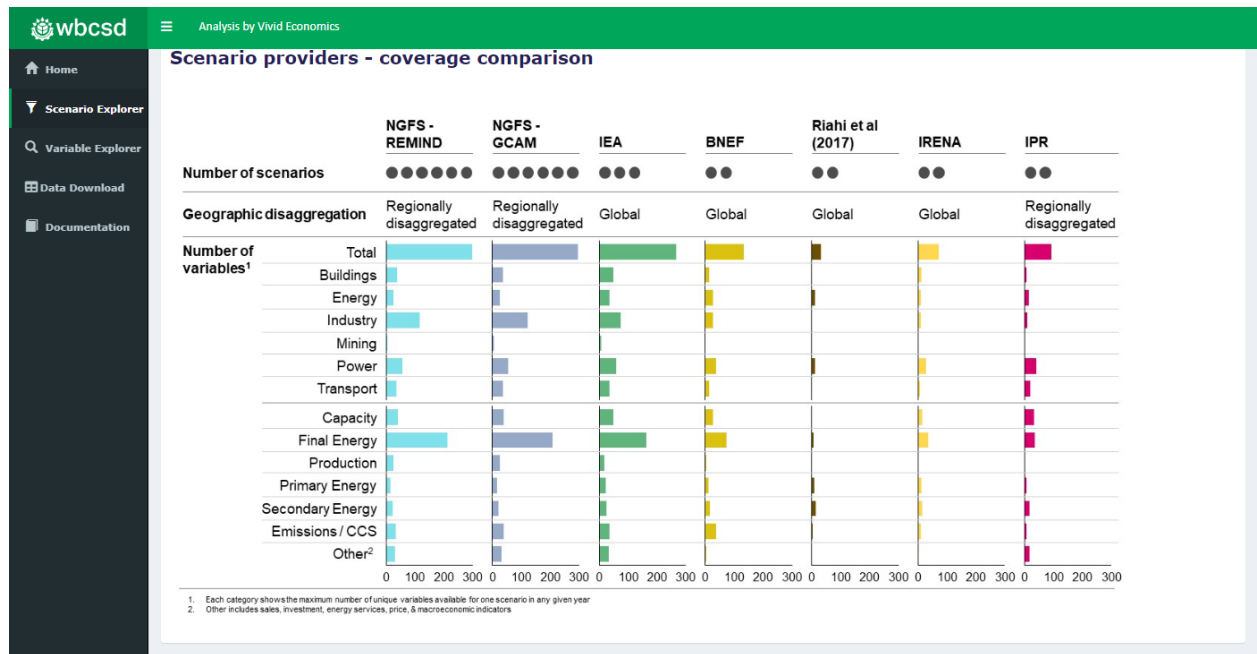


2.2.5 Scenario providers -coverage comparison

Below the “Scenario Comparison” graphs, the Scenario Explorer also shows and compares the variable and sector coverage of different providers within the catalogue (see Figure 7).

The coverage comparison graph shows how many scenarios each provider includes, as well as how many variables are available for each scenario, and the presence of regional disaggregation. It enables users to quickly identify providers and scenarios that may be able to provide the most breadth of data in a relevant sector or variable type.

Figure 8 Scenario providers comparison table to compare coverage



Further information about the modelling approach and narrative behind each scenario, as well as the source, can be found and accessed in the Background section (see Figure 8).

Figure 9 Background descriptions of scenarios and models

Model	Model description	Scenario	Scenario description	Source(s)
IEA Global Energy and Climate Model	The International Energy Agency's (IEA) Global Energy and Climate Model (GEC) is a bottom-up partial-optimisation model that models energy demand, supply, transformation, and prices.	Net Zero Energy 2050	The Net Zero Energy 2050 scenario sets out a pathway for the global energy sector to achieve net zero CO2 emissions by 2050. It doesn't rely on emissions reductions from outside the energy sector to achieve its goals. Universal access to electricity and clean cooking are achieved by 2030.	IEA World Energy Outlook 2022
IRENA	The International Renewable Energy Agency (IRENA) provides transition modelling of the energy system with a focus on renewables.	1.5C Scenario	The 1.5 Scenario is an orderly transition to limit global warming to 1.5C by the end of the century with a focus on renewables. It reaches net zero energy emissions in 2050. The model is a calculator based on energy statistics with a link to a macro-econometric model for socio-economic analysis. The land use sector is not covered.	World Energy Transitions Outlook: 1.5°C Pathway; Global Renewables Outlook: Energy transformation 2050
NGFS GCAM	The Network for Greening the Financial System (NGFS) provides transition modelling with the aim to develop climate risk management in the financial sector. GCAM is a partial equilibrium model of the energy and land sector, which assumes myopic consumers and producers.	Divergent Net Zero	The Divergent Net Zero scenario assumes that optimal carbon prices in line with the long-term targets are implemented immediately after 2020 to bring the median temperature below 1.5°C in 2100, after a limited temporary overshoot. Policy pressure and mitigation efforts are unevenly distributed across sectors, with stronger mitigation action taking place in the Transport and Buildings sectors relative to reflect consumer-oriented measured being preferred by policy makers.	NGFS Scenario Explorer
NGFS REMIND-MAgPIE	The Network for Greening the Financial System (NGFS) provides transition modelling with the aim to develop climate risk management in the financial sector. REMIND-MagPIE combines a general equilibrium model on the energy sector and the macroeconomy under perfect foresight with a partial equilibrium model on the land sector under myopic behaviour.	Divergent Net Zero	The Divergent Net Zero scenario assumes that optimal carbon prices in line with the long-term targets are implemented immediately after 2020 to bring the median temperature below 1.5°C in 2100, after a limited temporary overshoot. Policy pressure and mitigation efforts are unevenly distributed across sectors, with stronger mitigation action taking place in the Transport and Buildings sectors relative to reflect consumer-oriented measured being preferred by policy makers.	NGFS Scenario Explorer
		Net Zero 2050	The Net Zero 2050 scenario This scenario foresees global CO2 emissions to be at net-zero in 2050. Furthermore, countries with a clear commitment to a specific net-zero policy target at the end of 2020 are assumed to meet this target. This scenario assumes that optimal carbon prices in line with the long-term targets are implemented immediately after 2020.	
Riahi et al (2017) from the AR6 Database	Riahi et al (2017) use a multi-model approach to estimate the emissions and land use implications of the Shared Socioeconomic Pathways. The two scenarios presented here have the lowest and highest GDP growth trajectories of all the AR6 Scenario Database and Explorer scenarios.	SSP3 (low growth) pathway	The SSP3 pathway is characterized by regional rivalry. The scenario builds on the narrative that nationalism, concerns about competitiveness and security, leads to low international priority for addressing environmental concerns causing environmental degradation low economic growth.	Riahi, et al., 2017
		SSP5 (high growth) pathway	The SSP5 pathway is characterized by fossil-fuel led economic growth. It assumes that a push for economic and social development is coupled with the exploitation of abundant fossil fuel resources, leading to rapid growth of the global economy.	

2.3 Variable Explorer

The Variable Explorer presents and compares all available variables in the Catalogue. Users can select a variable and see how the variable evolves over time on a line graph (as a solid line), and optionally in comparison to multiple scenarios from the same family (as dashed lines). The Catalogue also allows for a comparison between two variables at the same time, by checking the “Comparison mode” checkbox, (Figure 9) and to download a list of all variables in the Catalogue (see section 2.4).

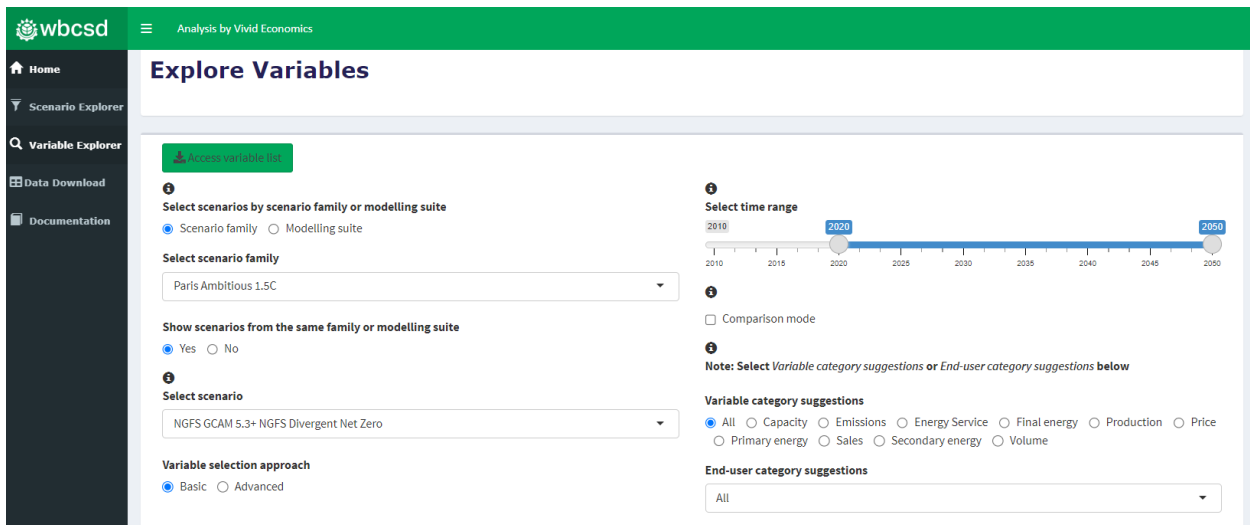
Figure 10 The Variable Explorer can contrast two variables



2.3.1 Selecting variables for exploration

On entry to the Variable Explorer feature, the user has several options to filter and extract variables for examination. The options, illustrated in Figure 10, are discussed below.

Figure 11 The Variable Explorer scenario selection options



2.3.2 Exploring scenario variables by scenario family

To examine variables within a specific scenario family, the user should:

1. Highlight the “Scenario family” option by clicking on the related circle

Select scenarios by scenario family or modelling suite

- Scenario family Modelling suite

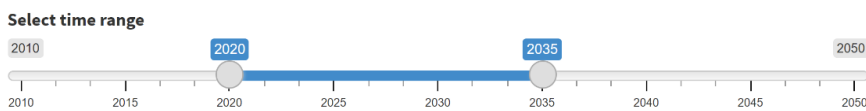
2. Select the desired scenario family from the drop down menu

Select scenario family

Paris Ambitious 1.5C

2.3.3 Setting the time range

The user can set the time range applied to the timeseries of selected variables by moving the buttons on the sidebar. The start of the range can be set at 5 year intervals from 2010 with an end point of 2050.



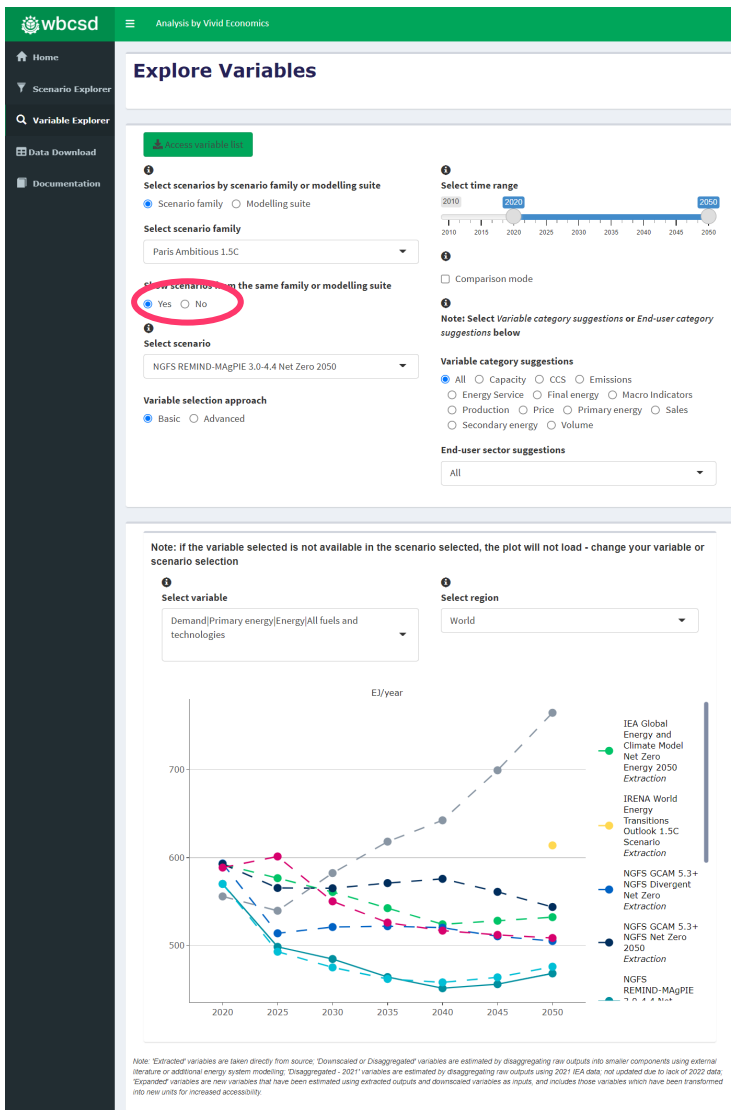
2.3.4 Displaying individual scenarios or all scenarios within a scenario family

Confirm whether or not you wish to display timeseries for all scenarios in the scenario family in which the desired variable appears by clicking “Yes” or “No” in the box below.

Show scenarios from the same family or modelling suite

Yes No

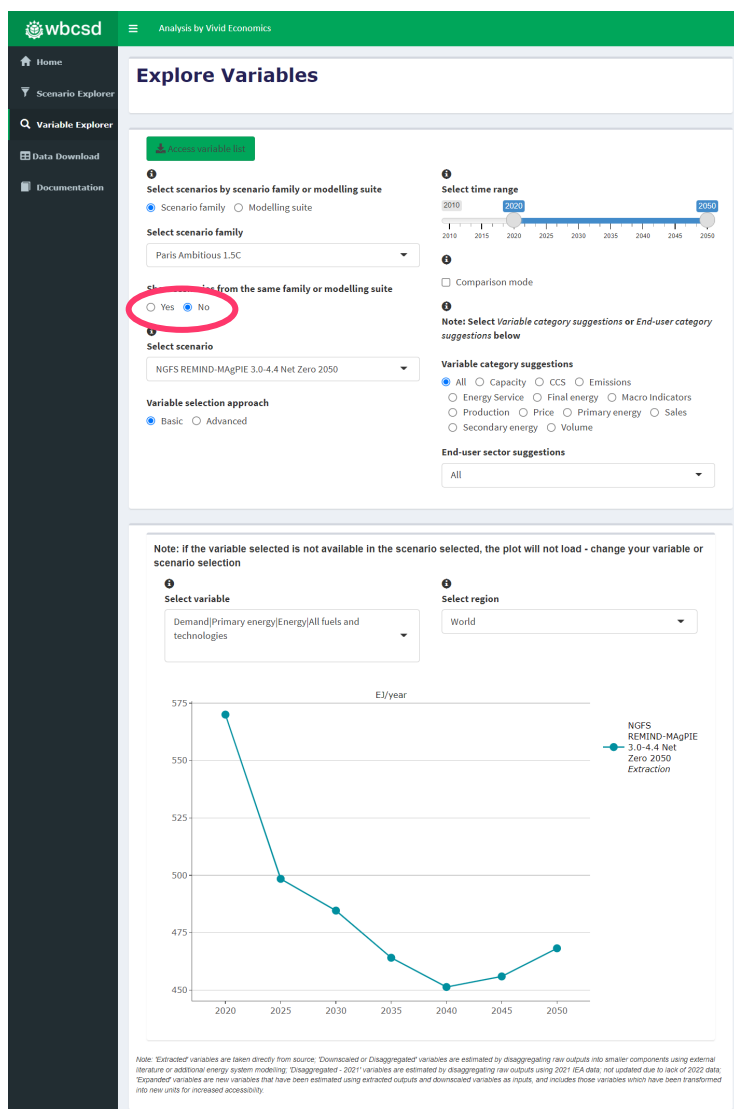
If “Yes” is chosen, timeseries for all scenarios in the selected scenario family that contain the desired variable are presented in the main figure.



Note: If the variable selected is not available in the scenario selected, the plot will not load - change your variable or scenario selection

Note: "Extracted" variables are taken directly from source; "Downscaled" or "Disaggregated" variables are estimated by disaggregating raw outputs into smaller components using external literature or additional energy system modeling; "Disaggregated - 2021" variables are estimated by disaggregating raw outputs using 2021 IEA data, not updated due to lack of 2022 data; "Expanded" variables are new variables that have been estimated using extracted outputs and downscaled variables as inputs, and includes those variables which have been transformed into new units for increased accessibility.

If “No” is selected, the user chooses a scenario from the drop down box under Select scenario and only that timeseries is presented in the main figure.



Explore Variables

Select scenarios by scenario family or modelling suite

Scenario family Modelling suite

Select scenario family

Paris Ambitious 1.5C

Select scenarios from the same family or modelling suite

Yes No

Select scenario

NGFS REMIND-MAGPIE 3.0-4.4 Net Zero 2050

Variable selection approach

Basic Advanced

Select time range

2010 2015 2020 2025 2030 2035 2040 2045 2050

Comparison mode

Notes: Select Variable category suggestions or End-user category suggestions below

Variable category suggestions

All Capacity CCS Emissions
 Energy Service Final energy Macro Indicators
 Production Price Primary energy Sales
 Secondary energy Volume

End-user sector suggestions

All

Note: if the variable selected is not available in the scenario selected, the plot will not load - change your variable or scenario selection

Select variable

Demand|Primary energy|Energy|All fuels and technologies

Select region

World

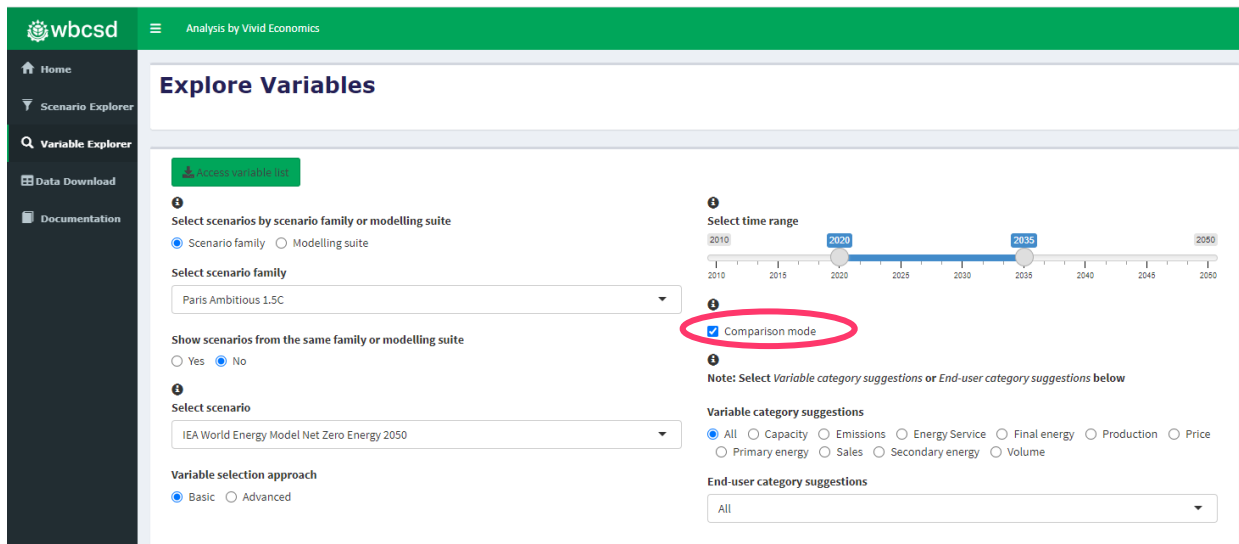
EJ/year

NGFS REMIND-MAGPIE 3.0-4.4 Net Zero 2050 Extraction

Year	Value (EJ/year)
2020	575
2025	500
2030	485
2035	465
2040	450
2045	455
2050	470

Note: Extracted variables are taken directly from source. Downscaled or Disaggregated variables are estimated by disaggregating raw outputs into smaller components using external literature or additional energy system modeling. Disaggregated - 2021 variables are estimated by disaggregating raw outputs using 2021 IEA data, not updated due to lack of 2022 data. Expanded variables are new variables that have been estimated using extracted outputs and downscaled variables as inputs, and includes those variables which have been transformed into new units for increased accessibility.

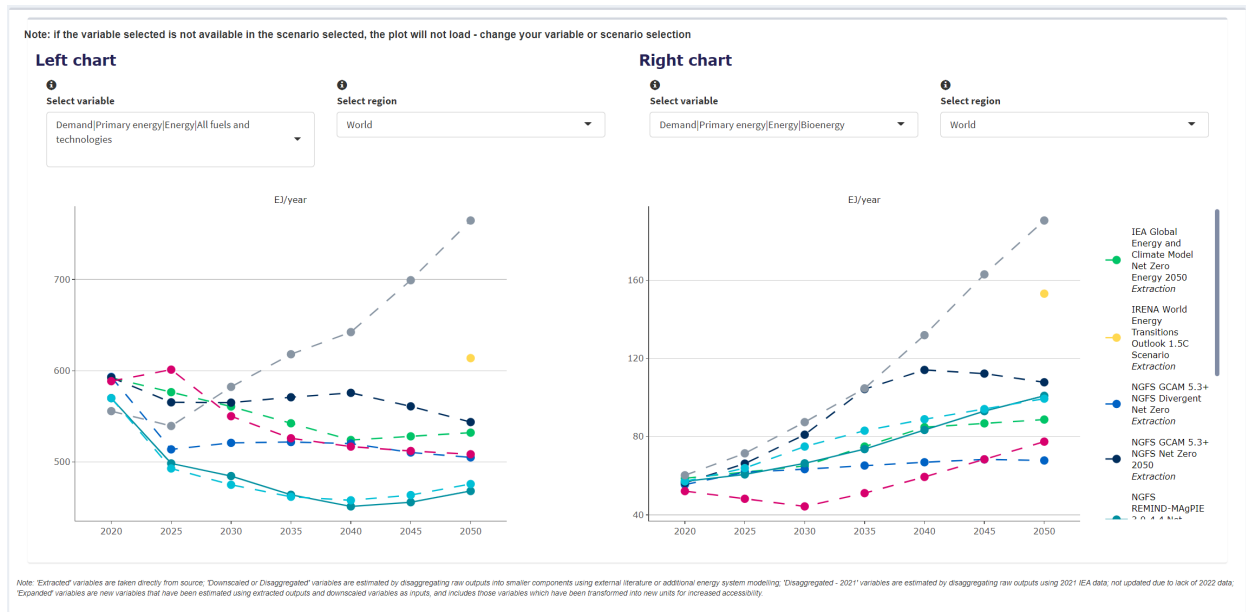
2.3.5 Comparing two variables



To display and compare two variables on screen, tick the *Comparison mode* option.

When *Compare mode* is activated, the user can select two variables for which the timeseries of selected scenarios are presented side by side – see Figure 11.

Figure 12 Activation of comparison mode and comparison of timeseries of two variables



2.3.6 Variable category selection

The optional variable category suggestions filters the full list of variables to a smaller set of similar variables, to facilitate screening.

To examine suggested variable categories, choose the relevant sector from the buttons displayed and available under the *Variable category suggestions* field

Variable category suggestions

All Capacity Emissions Energy Service Final energy Production Price Primary energy Sales Secondary energy Volume

2.3.7 End-user sector level variable exploration

The optional end-user category suggestions provide a smaller set of variables that might be particularly relevant for the selected sector in case a user is unsure about which variables to look at.

To examine variables relevant to end users from a specific sector, choose the relevant category from the drop down menu available under the *End-user category suggestions* field. These categories, and the variables associated, match those displayed in the Scenario Explorer tab. Note that an end-use category suggestion can only be selected if no variable category suggestion has been selected.

End-user sector suggestions

2.3.8 Variable selection approach

Users can search the variable list by typing keywords like “hydrogen” or “oil demand” into the *Select variable* field. In order to activate this keyword search function, users can click on the *Select variable* field and press “backspace” on their keyboard. Users can also select a region of interest in the drop-down menu under the *Select region* field.

Note that the *Comparison mode* creates a second line graph. Users can contrast two different variables or look at the same variable for different regions as comparison. The shape of the markers on the line graphs indicates variable type (e.g. “Extracted” variable types are indicated as dot markers).

For example, you continue your journey as an oil & gas analyst and have selected the IEA Net Zero Energy 2050 scenario because it provides the highest risk for your business. You choose primary oil demand as your first variable because you want to understand how it evolves between 2020 and 2050 under net zero. At the same time, your business considers investments in solar energy to make the business more resilient and you select solar electricity generation as the second variable. The Catalogue shows you both variables next to each other.

Figure 13 Selection and comparison of primary oil demand and solar electricity generation





There are two selection approaches available to the user to explore and to extract variables:

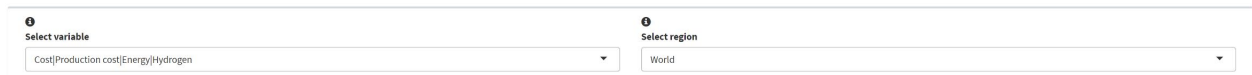
Variable selection approach

Basic Advanced

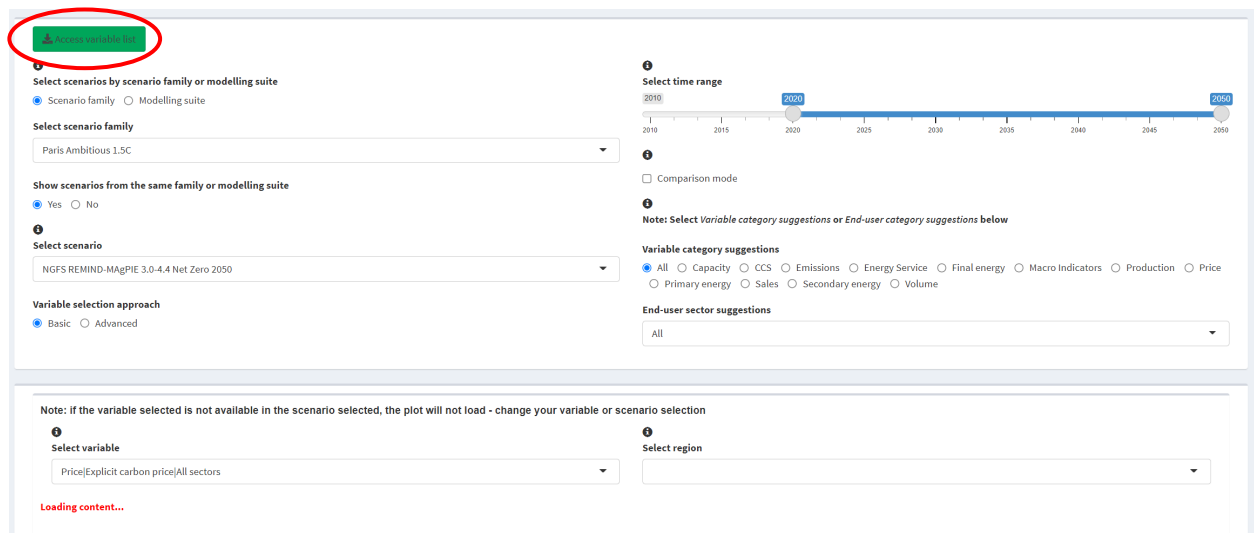
- “Basic” – the default selection approach; and
- “Advanced” – an approach which provides further variable selection and filtering options

“Basic” variable selection approach

Using the “Basic” approach, the user can examine the full list of variables. Users can search the full variable identifier, for example by typing “cost hydrogen” to find the Variable “Cost|Production cost|Energy|Hydrogen”



As of version 2.0, the list of variables appearing in the “Select variable” field is no longer restricted to the variables available in the selected scenario, to allow users to identify all the variables available in the catalogue. If the variable you select is not available in the scenario selected above, the plot(s) will not load. The message “Loading content” will remain on your screen, as in the example below – the REMIND-MAGPIE scenarios only include a shadow carbon price, but no explicit carbon price. If this error occurs, select another variable or another scenario. To identify all the variables covered by a specific scenario, download the variable list using the button circled below.



“Advanced” variable selection approach

Using the “Advanced” approach, the user has the option to filter the list of variables by an extended range of classes, sub-classes, sectors and sub-sectors. This allows for a more specific search. For example, users could select “Secondary energy” as variable subclass and explore which technologies and fuels are available. As for the “Basic” approach, the list of variables is not restricted by scenario.

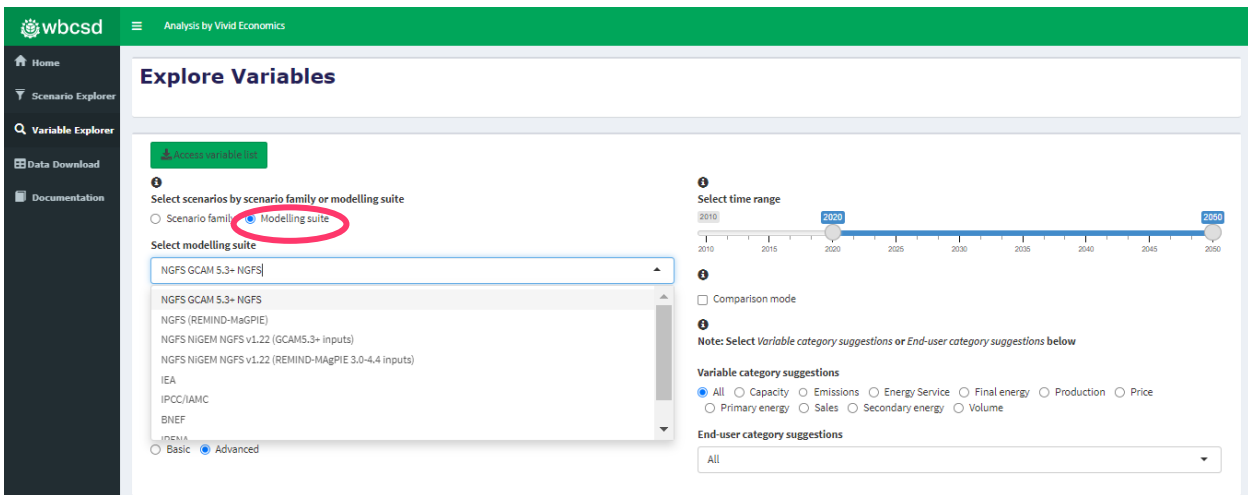


2.3.9 Exploring scenario variables by modelling suite

The user can explore variables across scenarios within a specific scenario modelling suite.

The approach and options to exploring variables by modelling suite mirror those applied to scenario families.

To explore variables by modelling suite, the user selects the *Modelling suite* option and selects the relevant modelling suite from the dropdown menu.



Once a modelling suite has been selected, the user can choose whether to display variable data from single model or from all the models within the modelling suite.

Select modelling suite

IEA

Show scenarios from the same family or modelling suite

Yes No

Once a variable has been selected, the graph will display single or multiple timeseries as per the user selection. See, for example, Figure 12.

Note that when exploring variables by modelling suite, the objective is to examine how timeseries vary across models. Extracted scenarios may therefore be classified in different scenario families.

2.3.10 Additional variable information

Below the graph, the Catalogue offers three tabs with additional information relating to the selected variable(s):

- The first tab provides *Underlying Data* of the graphs (Figure 13)
- The *Variable Information* tab provides access to a short description of the variable (Figure 14); and
- The third tab contains details of the *Data Availability and Terms of Use* including the scenario author, the data source and whether specific scenario data are available for download (Figure 15).

Figure 14 The Underlying Data tab provides details the underlying data presented in the graphs

Underlying Data		Variable Information		Data Availability and Terms of Use										
Scenario	Selected Scenario	Region	Variable	Unit	Variable Type	Availability	2020	2025	2030	2035	2040	2045	2050	
1	NGFS GCAM 5.3+ NGFS Divergent Net Zero	No	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/year	Extraction	See availability tab	593	514	521	522	520	510	505
2	NGFS GCAM 5.3+ NGFS Net Zero 2050	No	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/year	Extraction	See availability tab	593	565	565	571	576	561	544
3	NGFS REMIND-MagPIE 3.0-4.4 Divergent Net Zero	No	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/year	Extraction	See availability tab	570	493	475	462	458	464	476
4	NGFS REMIND-MagPIE 3.0-4.4 Net Zero 2050	Yes	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/year	Extraction	See availability tab	570	498	485	464	451	456	468
5	IEA World Energy Model Net Zero Energy 2050	No	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/year	Extraction	See availability tab	592	577	561	542	524	528	532
6	IPOC/IAMC REMIND 2.1 1.5C - SSP5	No	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/yr	Extraction	See availability tab	556	540	582	618	642	699	765
7	BNEF NEO 2022 Net Zero Energy 2050	No	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/year	Extraction	See availability tab	571	616	598	566	553	553	558
8	IRENA World Energy Transitions Outlook 1.5C Scenario	No	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/year	Extraction	Direct download	NA	NA	NA	NA	NA	NA	614
9	UN PRI Inevitable Policy Response Required Policy Scenario	No	World	Demand/Primary energy/Energy/All fuels and technologies	EJ/year	Extraction	Direct download	589	601	550	526	517	512	509

Showing 1 to 9 of 9 entries
Number of decimals: 0

Figure 15 The Variable Information tab provides additional background information on variables

Underlying Data		Variable Information		Data Availability and Terms of Use										
Variable Identifier	Description													
1	Demand/Primary energy/Energy/Gas	Primary energy consumption of gas												

Showing 1 to 1 of 1 entries

Figure 16 The Data Availability and Terms of Use tab provides details of use, access to and source of scenario data

Underlying Data	Variable Information	Data Availability and Terms of Use	Source(s)
Author	Download Availability	Terms of Use	Source(s)
1 NGFS	Data significantly modified by Vivid Economics is available for download; for download of raw scenario data, refer to the licencing conditions	The Network for Greening the Financial System (NGFS) data is updated quarterly, the current version of the Catalogue uses the update from 14.10.22. NGFS scenario data provided is provided under a Public License, for further details please see: License for the NGFS scenario data .	NGFS Scenario Explorer
2 IEA	Data significantly modified by Vivid Economics is available for download; for download of raw scenario data, refer to the licencing conditions	The IEA's data in the catalogue is from the WEO-2022 Free Dataset. The WEO-2022 Free Dataset is available under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 license (CC BY-NC-SA 4.0). You are free to copy, redistribute and adapt the data, provided the use is for non-commercial purposes, under the following conditions: • Third-party content - If you wish to use or re-disseminate any data in this file that is sourced or attributed to a third party, it is your responsibility to determine whether permission is needed for that re-use and to obtain permission from the relevant owner. • Attribution - Please cite the IEA's data as follows: International Energy Agency (2022), World Energy Outlook 2022, IEA, License: Creative Commons Attribution CC BY-NC-SA 4.0. • Adaptations - If you create derived material based on IEA data, please use the following notice: Based on data from International Energy Agency (2022), as modified by [insert your legal entity name]. • ShareAlike - If you transform, build on or otherwise modify the IEA's data in order to derive new material, you must distribute your derived material under the same license as the original. • Commercial usage: If you wish to use the data for commercial purposes or use or distribute your derived material for commercial purposes, please contact: compliance@iea.org	IEA World Energy Outlook 2022
3 IIASA, IAMC and IPCC WG III	Data not available for download. Contact: ipccar5db.coordination@iiasa.ac.at .	The IPCC does not produce its own scenarios, but assesses scenarios belonging to the research community. Any mention of 'Intergovernmental Panel on Climate Change (IPCC)' in the Catalogue, documentation, or the figures therein, is in reference to the AR6 Scenario Explorer and Database hosted by IIASA (copyright IIASA and IAMC 2019-2019) and adapted under Creative Commons. The databases have been developed under an MOU between IIASA, the Integrated Assessment Modelling Consortium and the Co-chairs of IPCC WG III. Any application of the data beyond its intended use in this Catalogue namely for the purposes of visualisation and comparison to other climate scenario providers, must be in accordance with the license for the AR6 Scenario Explorer and Database hosted by IIASA. IPCC-assessed scenarios data used in this Catalogue is not altered or derived in any manner beyond its visualisation.	AR6 Scenario Explorer and Database hosted by IIASA
4 BNEF	Data not available for download. Contact the BNEF team.	BloombergNEF New Energy Outlook 2022 data contained throughout the Catalogue may be used, reproduced or printed with appropriate acknowledgement given to BloombergNEF as well as a direct link to the New Energy Outlook. The data must not be resold as part of any data or research product. For more information on BloombergNEF, as well as access to the full New Energy Outlook 2022, please visit the BNEF website.	BNEF New Energy Outlook 2022
5 IRENA	Data freely available for download	Unless otherwise stated, material in this publication may be freely used, shared, copied, reproduced, printed and/or stored, provided that appropriate acknowledgement is given of IRENA as the source and copyright holder. Material in this publication that is attributed to third parties may be subject to separate terms of use and restrictions, and appropriate permissions from these third parties may need to be secured before any use of such material.	World Energy Transitions Outlook: 1.5°C Pathway; Global Renewables Outlook: Energy Transformation 2024
6 UN PRI	Data freely available for download	UN PRI scenarios (The Inevitable Policy Response) are open source and free to use with the appropriate citation.	Inevitable Policy Response 2021

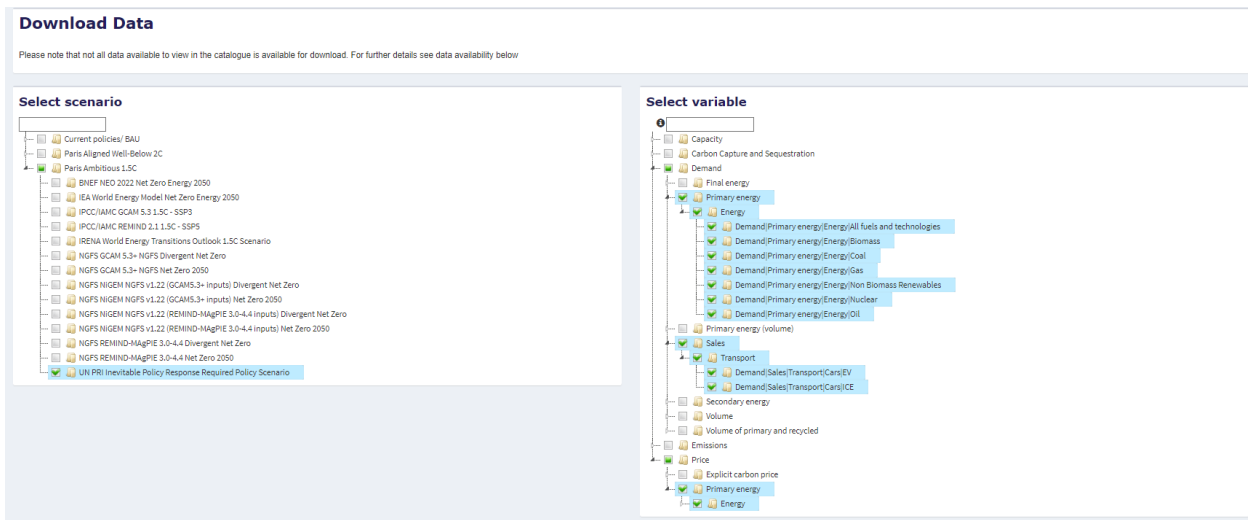
[Download data](#)

2.4 Data Download

The Data Download section allows users to extract variables from the Catalogue for further analysis and disclosure. The selection by scenario, variable, region and time are similar to the Variable Explorer, but users can choose an unlimited number of scenarios and variables in the Data Download section (Figure 16). The Catalogue will provide users with an Excel file with all the data selected that can be used as an input for internal modelling and decision making, as well as climate disclosure. Note that not all data from the Variable Explorer is available for download due to the terms of use of scenario providers. Users are required to ensure that their use of the data is in line with those terms of use as detailed in the "Data availability and terms of use" tab (Figure 15).

For example, after browsing through the Catalogue in your role as oil & gas analyst, you want to use some variables for internal P&L modelling to understand how the market for oil and solar changes. You select the two Paris 1.5°C scenarios that caught your attention in the Scenario Explorer. Since you are unsure about the climate ambition, you are also adding the two equivalent scenarios from the Paris 2C family. You select all primary energy demand, the price for oil, gas and electricity as well as the cost of solar. Since your main markets are in Asia and Europe, you add those regions to the selection.

Figure 17 The Data Download section allows unlimited selection of scenarios and variables



The Catalogue shows a preview of the variables and scenarios selected below (Figure 17). Click the green ‘Download’ Button to produce an Excel file of the selection.

Figure 18 The data can be downloaded at the bottom

Preview

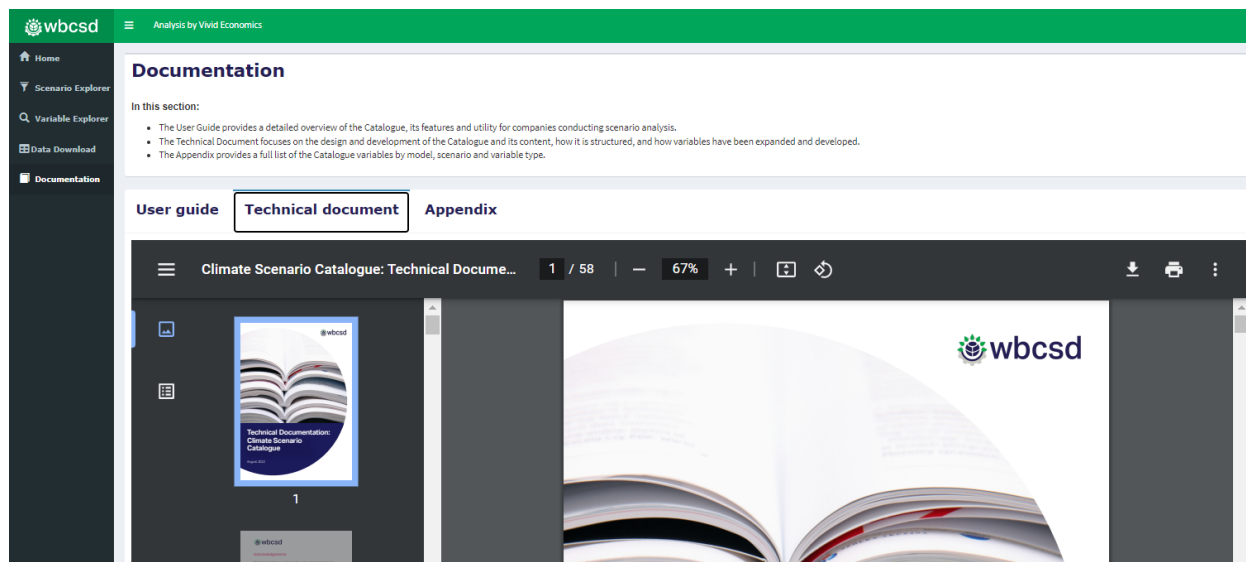
Show

Scenario	Scenario Family	Variable	Description	Reference	Region	Unit	2020	2025	2030	2035	2040	2045	2050
1 UN PRI Inevitable Policy Response Required Policy Scenario	Paris Ambitious 1.5C	Demand/Primary energy/Energy/All fuels and technologies	Total Primary Energy Demand	Variable taken directly from source.	World	EJ/year	588.6	601.2	550.2	526.0	516.9	512.1	508.5
2 UN PRI Inevitable Policy Response Required Policy Scenario	Paris Ambitious 1.5C	Demand/Primary energy/Energy/Biomass	Primary energy consumption of biomass	Variable taken directly from source.	World	EJ/year	52.1	48.2	44.3	51.1	59.4	68.4	77.4
3 UN PRI Inevitable Policy Response Required Policy Scenario	Paris Ambitious 1.5C	Demand/Primary energy/Energy/Coal	Primary energy consumption of coal	Variable taken directly from source.	World	EJ/year	166.2	141.3	83.3	53.0	36.7	23.4	15.8
4 UN PRI Inevitable Policy Response Required Policy Scenario	Paris Ambitious 1.5C	Demand/Primary energy/Energy/Gas	Primary energy consumption of gas	Variable taken directly from source.	World	EJ/year	129.5	124.4	104.3	84.9	72.5	62.8	53.0
5 UN PRI Inevitable Policy Response Required Policy Scenario	Paris Ambitious 1.5C	Demand/Primary energy/Energy/Non Biomass Renewables	Primary energy consumption of non-biomass renewables (solar, wind, geothermal, hydro, marine and hydrogen)	Variable taken directly from source.	World	EJ/year	37.4	63.1	117.6	181.2	233.6	271.3	294.9
6 UN PRI Inevitable Policy Response Required Policy Scenario	Paris Ambitious 1.5C	Demand/Primary energy/Energy/Nuclear	Primary energy consumption of nuclear	Variable taken directly from source.	World	EJ/year	29.0	27.4	27.6	30.4	31.4	30.6	28.9

2.5 Documentation

The technical documentation for the Catalogue can also be accessed via the “Documentation” button on the panel on the left of the Home section (see Figure 18). A copy of this User Guide is also available.

Figure 19 Catalogue access to documentation from panel on Home section



Links to the Catalogue, Forum Report and technical documentation can be also be found at www.wbcscd.org/CSARA.