

Understanding the Scenario Analysis Outputs

This document describes the Key Concepts, Files, and Data associated with the scenario analysis outputs.

KEY CONCEPTS

Sectors and Technologies

The asset-level data behind this analysis covers 8 sectors. Scenario analysis of output data is done for the Oil&Gas, Coal, Power, and Automotive sectors. Scenario analysis of emissions intensity is done for the Shipping, Aviation, Steel, and Cement sectors.

A technology is a method of production within a sector. For example, within the Power sector electricity can be generated using coal-fired, gas-fired, nuclear, hydro, and or renewable power plants. In general, technologies within a sector produce fungible outputs, and vary by their relative “brown”- or “green”-ness. For example, within the Automotive sector electric vehicles and gasoline engine vehicles are both considered “passenger vehicles” (fungible); electric vehicles are considered the “greener” technology option relative to gasoline engines.

Production vs Capacity

Asset-level data providers provide “build out plans” for each asset that, depending on the sector, are forward-looking projections of either production or capacity. In contrast to production data, capacity data requires the application of an additional utilization factor to generate production numbers.

Production data is provided for the fossil fuel and automotive sectors (for example, the number of vehicles produced in a given year), while power sector is data is given as capacity (MW of installed electric generation capacity). No utilization factors are applied in the results; results are in the same format (production or capacity) as the asset-level databases.

For brevity, in the text below the term “production” is used in a generic sense to encompass either production or capacity (which will depend on the sector).

Current Plans vs Plans “consistent with the scenario”

Companies’ current build-out plans (production or capacity, depending on the sector) are retrieved from data providers at the asset level and aggregated along the Bloomberg-defined corporate structure, and are referred to as the company’s “current plans”. Columns in the output files with current plan data have the “**Plan.**” prefix.

Columns in the output files with the “**Scen.**” prefix provide production/capacity plans consistent with the specified scenario. Data in these columns take the initial year production as a starting point, and then apply the changes specified by the scenario to produce an alternate set of production/capacity plans that are consistent with the scenario.

Data Units

The following table shows the units for each sector that are provided in the results files. The oil and gas sectors have been converted from Barrels of Oil and m³ of gas to GJ respectively. The conversion factor for oil is 6.12 GJ/Barrel and for gas is 0.0372 GJ/m³.

Production / Capacity				Emission Factors	
Sector	Unit	Sector	Unit	Sector	Unit
Power	MW	Aviation	Number of planes	Aviation	kg CO2/km passenger
Oil and Gas	GJ/day	Cement	t/a	Cement	t CO2/t Cement
Coal	t/a	Shipping	Number of Ships	Steel	t CO2/t Steel
Automotive	Number of cars	Steel	t/a		

OUTPUTS

Audit Files

The files below are used for tracking how securities in the input portfolio map to physical asset data, and therefore contribute to the overall results.

Type of Data	File Name	Purpose
Portfolio data	++ AUDIT-Portfolio-Coverage.csv	The original data set provided for the analysis, with additional columns identifying which rows/securities are included in each asset class and type of analysis, and also how securities roll up to a company level.
Mapping from portfolio data to asset-level data	++ PortInput-AUDIT-Coverage.csv ++ PortInput-AUDIT-Company-ALD-Match.csv ++ PortInput-AUDIT-Security-ALD-Match.csv [note: this set of files are produced for each asset class, with either “Equity-” or “Bonds”+ prefix]	Maps how each security held within the equity and bond portfolios maps to companies and therefore production in the asset-level data.

Results Files

The files below contain the results of the scenario analysis model—e.g., the portfolio’s forward-looking production and capacity plans in the sectors covered by asset-level data. Data in these files provide the bulk of the information used in the automated PDF reports.

Type of Data	File Name	Purpose
Forward-looking production/capacity plans, aggregated to company level	++ Equity-PortInput-Comp.csv	Currently planned production and production consistent with the scenario for each company and technology in the equity portfolio.
Forward-looking production/capacity plans, aggregated to portfolio level	++ Equity-PortInput-Port.csv	Currently planned production and production consistent with the scenario for each technology in the equity portfolio.
Forward-looking production/capacity plans, aggregated to company level	++ Bonds-PortInput-Comp.csv	Currently planned production and production consistent with the scenario for each company and technology in the bond portfolio.
Forward-looking production/capacity plans, aggregated to portfolio level	++ Bonds -PortInput-Port.csv	Currently planned production and production consistent with the scenario for each technology in the bond portfolio.

DATA DICTIONARY

Describes the columns in the scenario analysis results files.

Identifiers

These columns uniquely identify a row of results.

Column Name	Which asset class does this column apply to?	What aggregation level uses this Column?	
Investor.Name	EQ, CB	Company, Portfolio	Investor Name
Portfolio.Name	EQ, CB	Company, Portfolio	Portfolio Name
Scenario	EQ, CB	Company, Portfolio	Identifies the scenario applied to calculate production “under the scenario”, which are saved in the “.Scen” columns. IEA Scenarios currently included are the IEA’s: B2DS, SDS, CPS, and NPS.
Allocation	EQ, CB	Company, Portfolio	Identifies the allocation method used for allocating some portion of the production of an entire company (pulled from ALD) to the company’s securities held in the portfolio. Also referred to as the Accounting Principle. Possible values are: PortfolioWeight. (used for EQ and CB) – production is allocated based on the weight (by Market Value) of the company’s securities in the portfolio. Ownership. (EQ only) – production is allocated based on the share of a company owned by the portfolio (i.e., percent of free floating shares owned).
EquityMarket	EQ	Company, Portfolio	A grouping/filtering variable based on the country of domicile of the company issuing the securities. Based on its country of domicile, every company in the equity portfolio is mapped to one or more of the following EquityMarket values: Global, Developed, or EmergingMarkets. For example, production from a company domiciled in the US would be included in both “Global” and “Developed” results.
Scenario Geography	EQ, CB	Company, Portfolio	A grouping/filtering variable based on the country where production is located. Every country is mapped to one or more of the following regional ScenarioGeographies: Global, OECD, Non-OECD, North America, Europe, and Asia Pacific. For example, production located in Japan would be included in “Global”, “OECD”, and “AsiaPacific” results.
Sector	EQ, CB	Company, Portfolio	Identifies the sector of production, based on the asset-level data.
Technology	EQ, CB	Company, Portfolio	Identifies the Technology used within a Sector to produce output, based on asset-level data.
Year	EQ, CB	Company, Portfolio	2018-2023
CorpBondTicker	CB	Company	Company identifier. For corporate bonds, this is the Bloomberg “COMPANY_CORP_TICKER” field.
bloomberg_id	EQ	Company	Company identifier. For public equities, this is the Bloomberg “ID_BB_COMPANY” field.

Fin.Sector	EQ, CB	Company	<p>The “Financial Sector” of the security.</p> <p>This is a mapping from either the BICS_SUBGROUP (corporate bonds) or ICB_SUBSECOR (public equity) associated with a company to one of the sectors covered in the asset data (see “Sectors” row in this table for list of possible values).</p> <p>If the BICS_SUBGROUP or ICB_SUBSECOR is not one of the covered sectors, then this column may have a value of “Other”.</p>
Port.Wt	EQ, CB	Company	Weight in the portfolio (by market value) of the company’s securities in the specified Fin.Sector .
Ownership.Wt	EQ	Company	Percent of the total free floating shares of the company owned by this portfolio.
Allocation.Wt	EQ, CB	Company	Depending on the value in the “Allocation” field, either the value of Port.Wt or the value of Ownership.Wt .

Results

The results/metrics in these columns apply to the specific combination of values in the identifier columns (see previous table). These columns are used by both the Company-Level and Portfolio-level results files. *(Note: “Deviation” is only in the portfolio results).*

TECHNOLOGY RESULTS			
Plan.TechProd	Technology production when all production from each company is allocated to the portfolio.	Scen.TechProd	Technology production consistent with the specified Scenario, when all production from each company is allocated to the portfolio.
Plan.Alloc.WtTechProd	<p>Technology production allocated to the portfolio based on the either the weight of each company in the portfolio (PortWeight method) or the percent of the company that the portfolio owns (Ownership method).</p> <p>This is equal to Allocation.Wt * Plan.TechProd</p>	Scen.Alloc.WtTechProd	<p>Technology production consistent with the specified Scenario, and allocated to the portfolio based on either the weight of each company in the portfolio (PortWeight method) or the percent of the company that the portfolio owns (Ownership method).</p> <p>This is equal to Allocation.Wt * Scen.TechProd</p>
Plan.Carsten	<p>Under the PortWeight allocation method, this is the percent of portfolio market value exposed production in the specified Technology.</p> <p>Not calculated under the Ownership allocation method.</p>	Scen.Carsten	<p>Under PortWeight allocation method, this is the percent of portfolio market value exposed to production in the specified Technology consistent with the specified Scenario.</p> <p>Not calculated under the Ownership allocation method.</p>
Plan.EmissionsFactor	<p>Emissions Factor in CO2/production units for each technology.</p> <p>Only provided for cement, steel and aviation sectors.</p>	Scen.EmissionsFactor	<p>Emissions Factor consistent with the given Scenario in CO2/production units for each Technology.</p> <p>Only provided for cement, steel and aviation sectors.</p>
Deviation	Deviation of planned Technology production from Technology production consistent with the specified Scenario, expressed as a percentage		

(Plan.Alloc.WtTechProd – Scen.Alloc.WtTechProd)/Scen.Alloc.Wt.TechProd			
SECTOR RESULTS			
Plan.SecProd	<p>Sector production, if all production from each company was allocated to the portfolio.</p> <p>This is the sum of Plan.TechProd for all technologies within the Sector.</p>	Scen.SecProd	<p>Sector production, if all production from each company consistent with the Scenario was allocated to the portfolio.</p> <p>This is the sum of Scen.TechProd for all technologies within the Sector.</p>
Plan.Alloc.WtSecProd	<p>Sector production allocated to the portfolio based on the weight of each company in the portfolio (PortWeight method) or the percent of the company that the portfolio owns (Ownership method).</p> <p>This is the sum of Plan.AllocWtTechProd for all technologies within the Sector.</p>	Scen.Alloc.WtSecProd	<p>Sector production consistent with the scenario allocated to the portfolio based on the weight of each company in the portfolio (PortWeight method) or the percent of the company that the portfolio owns (Ownership method).</p> <p>This is the sum of Scen.AllocWtTechProd for all technologies within the Sector.</p>
Plan.Sec.Carsten	<p>Under PortWeight allocation method, this is the percent of portfolio market value exposed to the given Sector.</p> <p>Not calculated under the Ownership allocation method.</p> <p>This is the sum of Plan.Carsten for all technologies within the sector.</p>	Scen.Sec.Carsten	<p>Under PortWeight allocation method, this is the percent of portfolio market value exposed to the given Sector, if production is consistent with the given scenario. Not calculated under the Ownership allocation method.</p> <p>This is the sum of Scen.Carsten for all technologies within the sector.</p>
Plan.Sec.EmissionsFactor	<p>Emissions Factor in CO2/production units for the given sector.</p> <p>This is the weighted average (by production) of Plan.EmissionsFactor for all technologies within the sector.</p> <p>Only provided for cement, steel and aviation sectors.</p>	Scen.Sec.EmissionsFactor	<p>Emissions Factor consistent with the given Scenario in CO2/production units for the given sector.</p> <p>This is the weighted average (by production) of Scen.EmissionsFactor for all technologies within the sector.</p> <p>Only provided for cement, steel and aviation sectors.</p>