OS-Climate Sector-Alignment Tool (SAT)

AOA - Webinar

March 2023

Presenters:

Leyla Javadova - Allianz
Imke Horten - Allianz
Michael Tiemann – Red Hat

Agenda

1 Introduction – Leyla Javadova, Michael Tiemann

2 SAT Tool – Leyla Javadova

3 Input Data – Imke Horten, Leyla Javadova

4 Live Demo – Michael Tiemann

5 Feedback Questions - All

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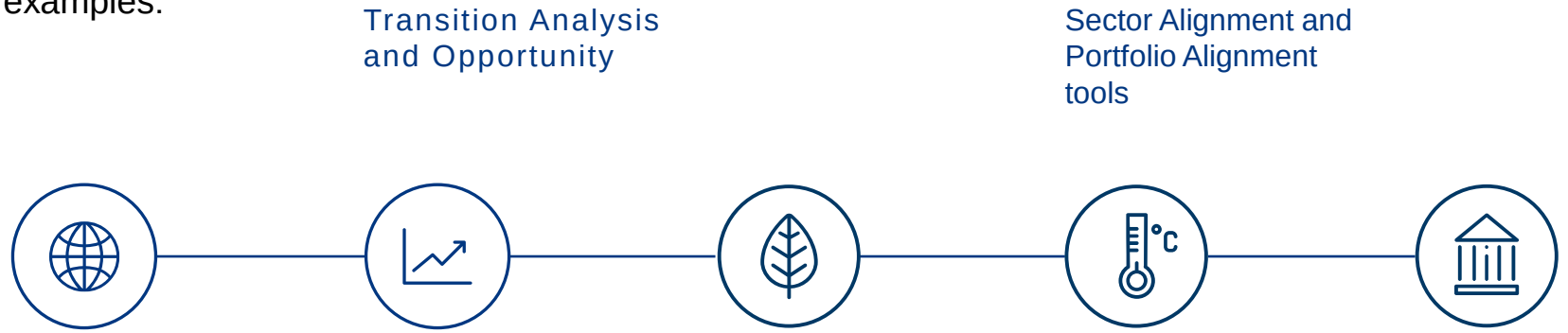
About OS-C Community

Open Source Context

OS-C is establishing an Open-Source collaboration community to build a data and software platform that will dramatically boost global capital flows into climate change mitigation and resilience. Through a non-profit, non-competitive organization, OS-C will aggregate the best available data, modelling, and computing and data science worldwide into an AI-enhanced physical-economic model that functions like an operating system, enabling powerful applications for climate integrated investing in a world where the future will be very different from the past.

- Communities of Practice have long been a means to spark and nurture innovation
- Communities of Practice typically cross organizational boundaries
- Functions as a "coop" where the members of the community contribute software engineers, data scientists, project managers, and SMEs to build the solutions they need with other members
- Sustained by benefits of participation, not formal command-and-control
- Well-suited to missions larger than any one organization can manage
- Open-Source software development well-suited to trans-organization collaboration

- OS-Climate examples:



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We need your feedback:

- What are the main use cases for you to apply a sector alignment tool?
- Should the tool integrate combined scope 1 + 2 + 3 Emissions or separate these?
- How comfortable are you with Scope 3 integration given lack of guidance and data quality around this topic?
- What sectors are a priority for you?
- Would you find it helpful to generate region and country specific temperature alignment results?
- Are there any other data points you would like SAT tool to incorporate?

Would you recommend any changes to users controls and/or output visualizations?

- What else would you like to see in an SAT tool?
- Biogenic vs. Non-biogenic emissions
- Benchmark-aligned missing data estimations (with uncertainties)
- Data connectors (bypassing data template)
- Alternate trajectory projections
- Green financing effects / opportunities

Carbon markets/offsets

- Metrics other than temperature score (such as carbon budget exceedance year)

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The objective

SAT Objective

OS-C SAT model built based on the TCFD convened “Portfolio Alignment Team” and GFANZ recommendations to help drive convergence and transparency in portfolio alignment methodologies with help of open-source modelling

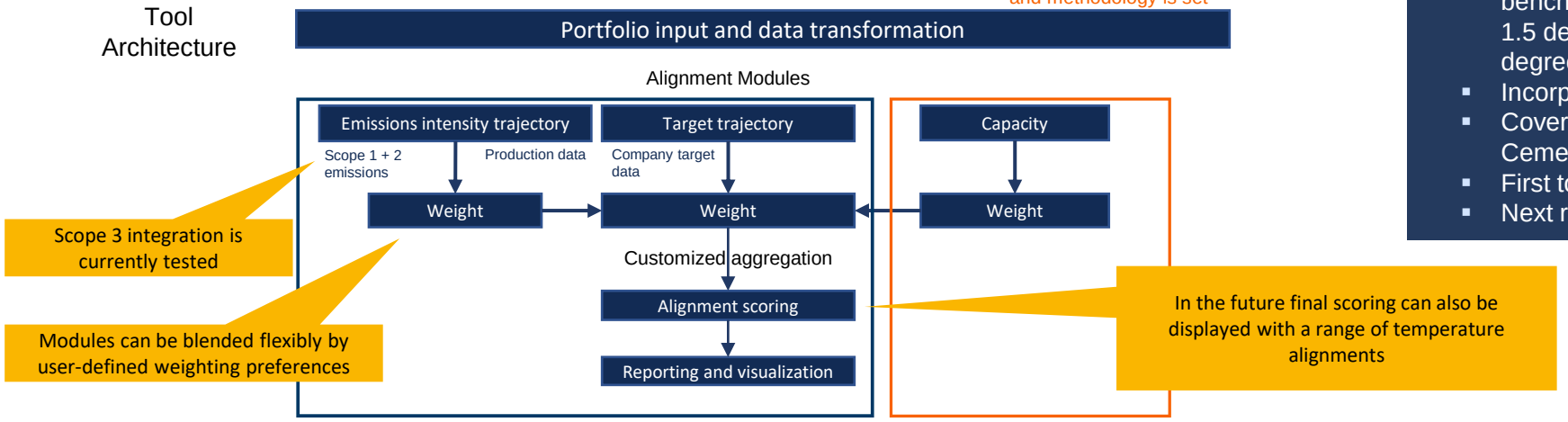
SAT Workstream Participants

LSEG Allianz IDS Red Hat URGENTEM ORTEC FINANCE metafinanz

Developed

To be developed once data and methodology is set

Tool Architecture



Mission achievements

- Model built on recommendations set out by TCFD and GFANZ
- The tool is transparent and dynamic
- Incorporates and cross compares multiple benchmarks (e.g., 2 degrees, below 2 degrees and 1.5 degree aligned scenarios from TPI, and 1.5 degree aligned scenarios from OECM)
- Incorporates backward-forward looking data
- Covers: O&G, Steel, Utilities, Automobiles and Cement sectors
- First tool release in June 2022
- Next release planned for June 2023

➢ Current potential use cases of SAT for FIs: **Portfolio construction**, **Investment research**, Asset Manager selection and monitoring, **Disclosure, Engagement, Evaluation of long-term climate impact of investment decisions,** Understanding the impact of policies, Supervisory activity

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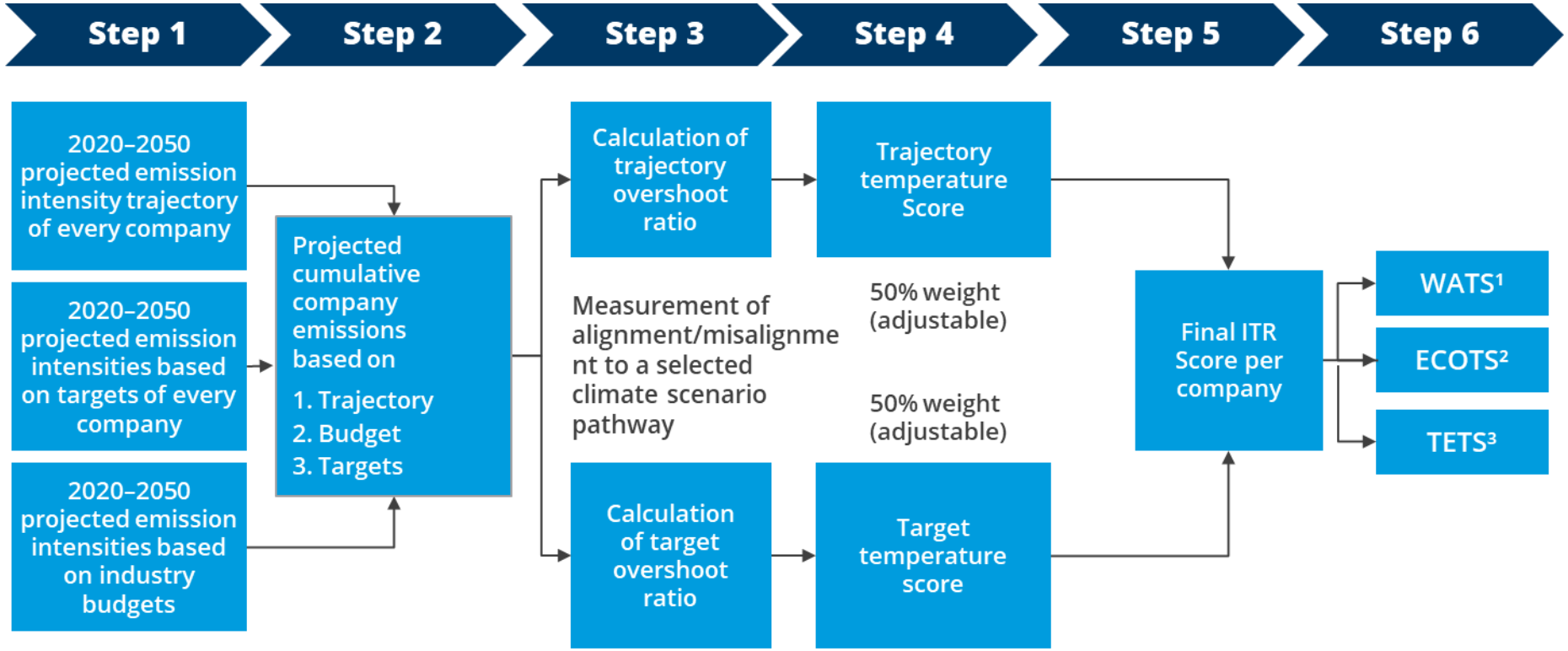
The approach

SAT—calculation process



¹WATS: Weighted average temperature score
²ECOTS: Enterprise Value + Cash emissions weighted temperature score
³TETS: Total emissions weighted temperature score

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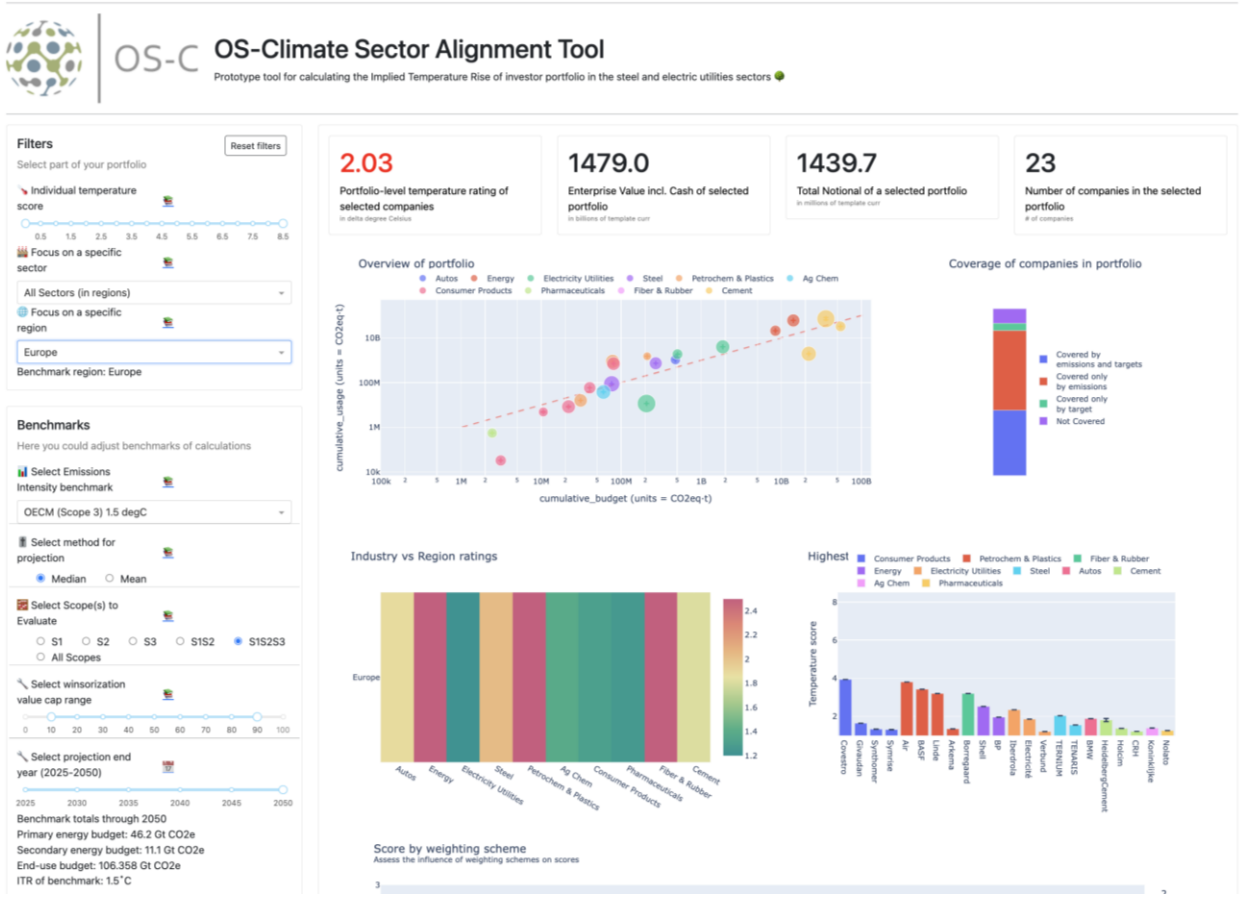
Results

OS-C final SAT scores can be aggregated in six different weighting models

OS-C will allow for tailored analytics for selected corporates across

- Sectors (defined in benchmarks)
- Regions (defined by user data, mapped to benchmarks)
- Scopes (S1, S1+S2, S1+S2+S3, etc.)
- Time horizon 2025-2050
- Aggregation types (e.g. weighted average, enterprise value weighted etc.)
- Scenarios (e.g. OECM, TPI)

SAT model that generates portfolio level scores across different climate scenarios, sectors and regions



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Scope 3

Challenges around Scope 3 integration

Scope 3 challenges

- Real decarbonization requires for cumulative emissions to stay within a defined carbon budget.
- Integrating all carbon emission scopes of a company without a clear understanding of the set-up and underlying assumptions of a climate benchmark, generates meaningless results.
- Estimations and uncertainty factors play an important role in determining sector alignment.

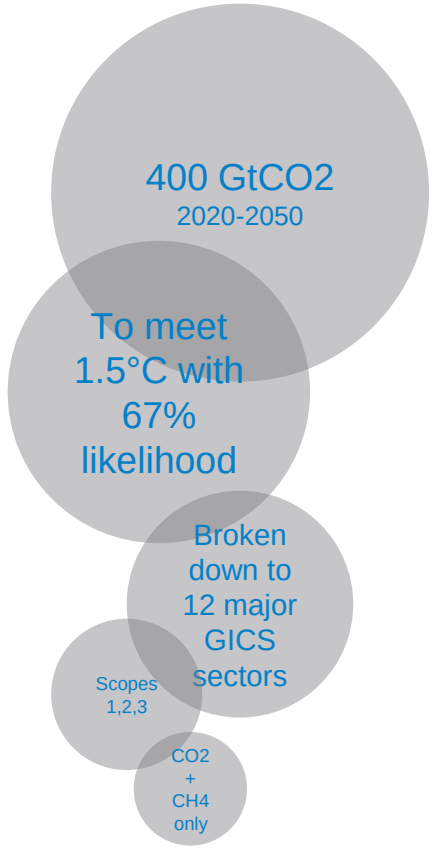
The OECM defines the three emissions scopes as follows:

Scope 1—All direct emissions from the activities of an organisation or under their control, including fuel combustion on site (such as gas boilers), fleet vehicles, and air-conditioning leaks.

Scope 2—Indirect emissions from electricity purchased and used by the organisation. Emissions are created during the production of energy and are eventually used by the organisation.

Scope 3—GHG emissions caused by the analysed industry that are limited to sector-specific activities and/or products classified in GICS.

Only sector-specific emissions are included.	Treatment of Scope 3 double-counting	Data Inconsistencies
Traveling, commuting, and all other transport-related emissions are reported under ‘transport’. The lease of buildings is reported under ‘buildings’. All other financial activities, such as ‘capital goods’, are excluded because no data are available for the GICS industry sectors and would lead to double counting.	Separates the sectors into one of three classes: Primary Energy (Oil, Gas, and Coal), Secondary Energy (Power, Heat, and Transport Fuels) and End-use Activities (everything else), and then using only these Scope 3 emissions that balance against a corresponding emission in another class. Each class represents a complete and consistent 3-scope interpretation of the global carbon budget.	Challenges to present the 'OECM Scope 3' emissions as part of the 'OECM Scope 1’ creates inconsistency with the way data is actually reported. The SAT tool follows the OECM guidance of using ’Production-Centric’ scope definitions for Power Utilities. The SAT tool does not yet provide support for Aviation and Shipping sectors.



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SAT Tool – Input Data Template

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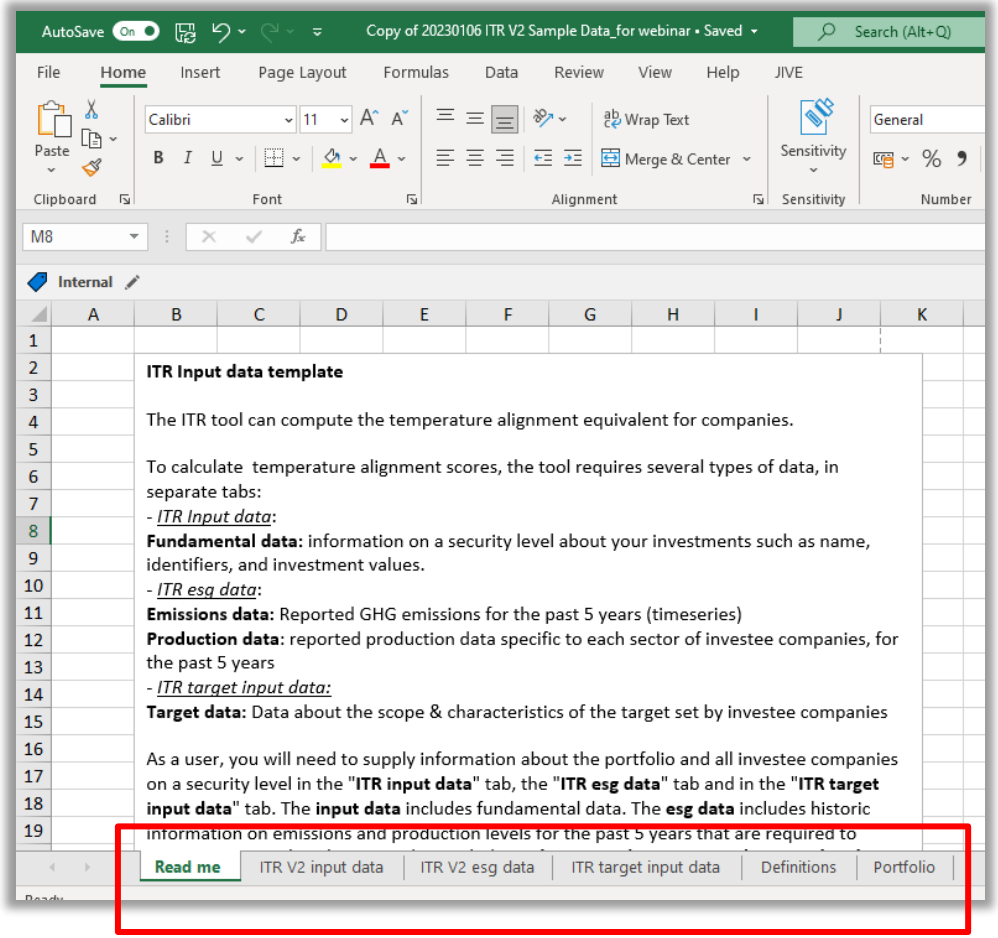
SAT Input Data Template

- Template needs to be filled with (well-formatted) data
- Two sheets dedicated to documentation:
  Read me, Definitions
- Four sheets to be filled with data by users:
  ITR input data, ITR ESG data, ITR target input data, Portfolio
- Definitions sheet and Data Template Requirements section on GitHub provide detailed information on how to fill the template
- Provides a common ground for harmonizing complex/disparate corporate disclosures that can be examined, critiqued, and updated by analysts, not only data providers



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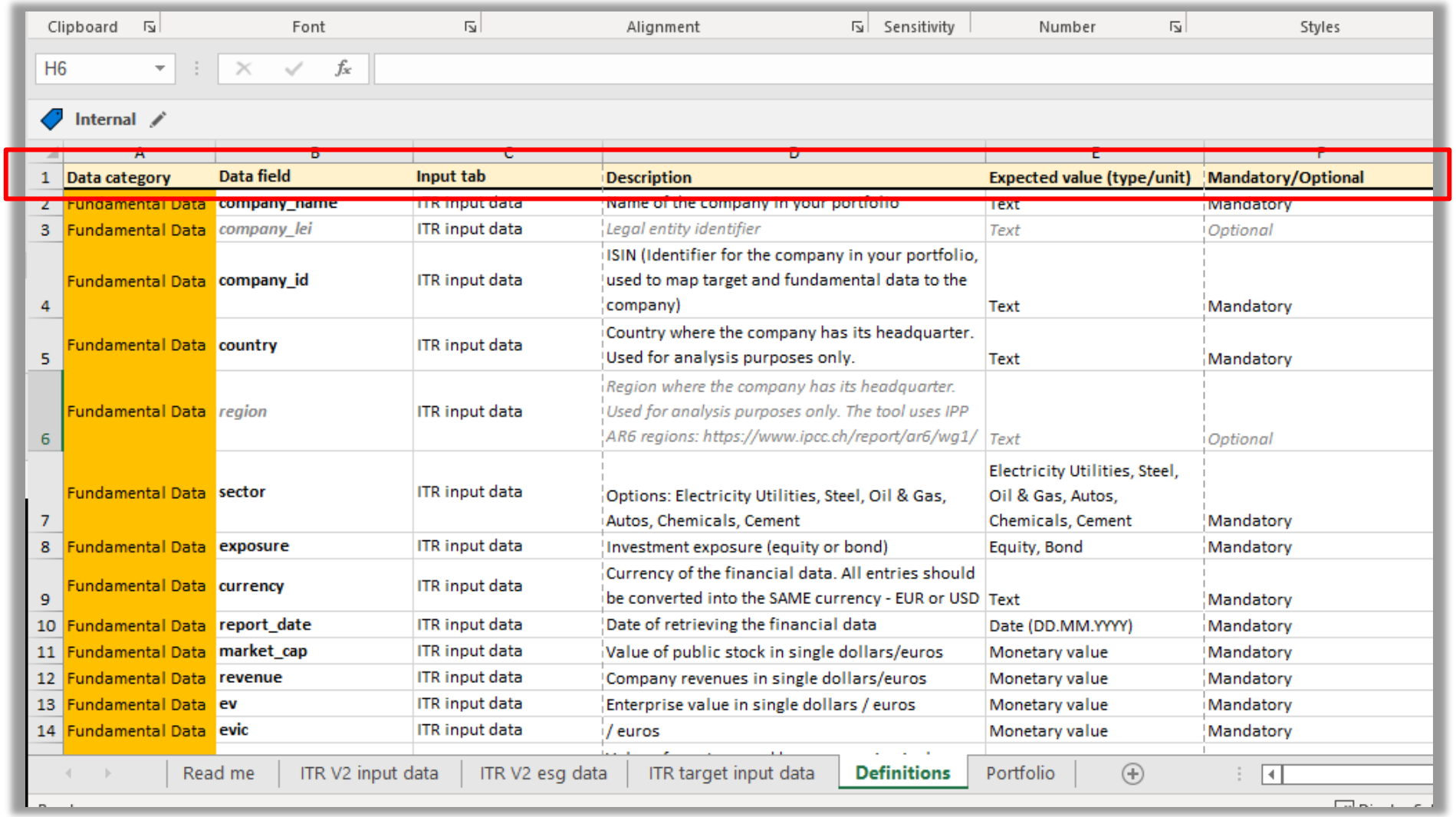
Definitions Sheet



Clipboard | Font | Alignment | Sensitivity | Number | Styles

H6

Internal

	A	B	C	D	E	F
1	**Data category**	**Data field**	**Input tab**	**Description**	**Expected value (type/unit)**	**Mandatory/Optional**
2	Fundamental Data	**company_name**	ITR input data	Name of the company in your portfolio	Text	Mandatory
3	Fundamental Data	*company_lei*	ITR input data	*Legal entity identifier*	*Text*	*Optional*
4	Fundamental Data	**company_id**	ITR input data	ISIN (Identifier for the company in your portfolio, used to map target and fundamental data to the company)	Text	Mandatory
5	Fundamental Data	**country**	ITR input data	Country where the company has its headquarter. Used for analysis purposes only.	Text	Mandatory
6	Fundamental Data	*region*	ITR input data	*Region where the company has its headquarter. Used for analysis purposes only. The tool uses IPP AR6 regions: https://www.ipcc.ch/report/ar6/wg1/*	*Text*	*Optional*
7	Fundamental Data	**sector**	ITR input data	Options: Electricity Utilities, Steel, Oil & Gas, Autos, Chemicals, Cement	Electricity Utilities, Steel, Oil & Gas, Autos, Chemicals, Cement	Mandatory
8	Fundamental Data	**exposure**	ITR input data	Investment exposure (equity or bond)	Equity, Bond	Mandatory
9	Fundamental Data	**currency**	ITR input data	Currency of the financial data. All entries should be converted into the SAME currency - EUR or USD	Text	Mandatory
10	Fundamental Data	**report_date**	ITR input data	Date of retrieving the financial data	Date (DD.MM.YYYY)	Mandatory
11	Fundamental Data	**market_cap**	ITR input data	Value of public stock in single dollars/euros	Monetary value	Mandatory
12	Fundamental Data	**revenue**	ITR input data	Company revenues in single dollars/euros	Monetary value	Mandatory
13	Fundamental Data	**ev**	ITR input data	Enterprise value in single dollars / euros	Monetary value	Mandatory
14	Fundamental Data	**evic**	ITR input data	/ euros	Monetary value	Mandatory

Read me | ITR V2 input data | ITR V2 esg data | ITR target input data | **Definitions** | Portfolio

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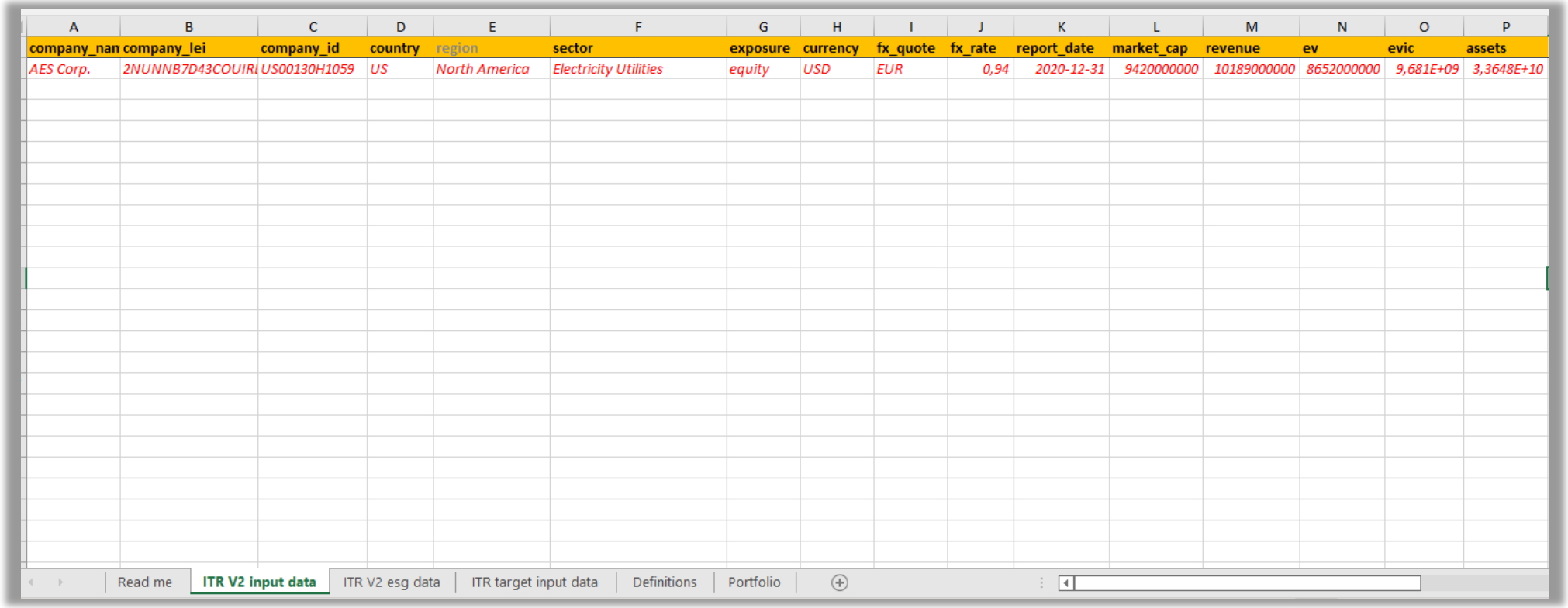
SAT Input Data Sheet– Fundamental Data

- Information on Fundamental company data like name, id, country, sector, and financial data
- Tool currently analyses several high emitting sectors: Electricity Utilities, Steel, Autos, Oil & Gas, Chemicals, Cement
- Currency values can be entered in common or native currencies



company_nan	company_lei	company_id	country	region	sector	exposure	currency	fx_quote	fx_rate	report_date	market_cap	revenue	ev	evic	assets
AES Corp.	2NUNNB7D43COUIRI	US00130H1059	US	North America	Electricity Utilities	equity	USD	EUR	0,94	2020-12-31	9420000000	10189000000	8652000000	9,681E+09	3,3648E+10

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SAT Input Data Sheet – Emission and Production Data

- Information on historic emission and production data over the last 5 years
- Emission data can be provided separately for the scopes (1, 2 ,3) or combined
- Production metric depends on the sector, e.g. MWh for Electricity Utilities, Fe_ton for Steel
- Tool accepts any imperial or metric units for the emission and production metric

	A	B	C	D	E	G	H	L	M	N	O	P
1	company_name	company_lei	company_id	metric	submetric	unit	report_date	2017	2018	2019	2020	2021
786				s1		kt CO2e	2020-01-30	3949	3483	1846		
787				s2	location	kt CO2e	2020-01-30	98	151	123		
788				s2	market	kt CO2e	2020-01-30	221	45	4		
789				s3	combined	kt CO2e	2020-01-30	0	34953	33594		
790	Ørsted	W9NG6WMZIYEU8VEDOG48	DK0060094928	s3	electricity	kt CO2e	2020-01-30		3570	3217		
791				s3	gas	kt CO2e	2020-01-30		31383	30377		
792				production	electricity	GWh	2020-01-30	25740	26013	28430		
793				production	gas	TWh	2020-01-30	129	131.1	125		
794				pdf			2020-01-30			https://orsted.com/-/media/annual2019/esg-perform		
795				s1		kt CO2e	2021-02-03		3483	1846	1851	
796				s2	location	kt CO2e	2021-02-03		151	123	111	
797				s2	market	kt CO2e	2021-02-03		45	4	2	
798				s3	combined	kt CO2e	2021-02-03		34953	33594	24417	
799	Ørsted	W9NG6WMZIYEU8VEDOG48	DK0060094928	s3	electricity	kt CO2e	2021-02-03		3570	3217	2437	
800				s3	gas	kt CO2e	2021-02-03		31383	30377	21980	
801				production	electricity	GWh	2021-02-03		26013	28430	32095	
802				production	gas	TWh	2021-02-03		131.1	125	90.3	
803				pdf			2021-02-03				https://orsted.com/esgperformance	
804				s1		kt CO2e	2022-02-02			1846	1851	2142
805				s2	location	kt CO2e	2022-02-02			123	111	53
806				s2	market	kt CO2e	2022-02-02			4	2	1
807				s3	combined	kt CO2e	2022-02-02			33594	24417	16217
808	Ørsted	W9NG6WMZIYEU8VEDOG48	DK0060094928	s3	electricity	kt CO2e	2022-02-02			3217	2437	2011
809				s3	gas	kt CO2e	2022-02-02			30377	21980	14206
810				production	electricity	GWh	2022-02-02			28430	32095	36957
811				production	gas	GWh	2022-02-02			124951	90347	61349
812				pdf			2022-02-02					https://orstedcdn

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SAT Target Input Data Sheet

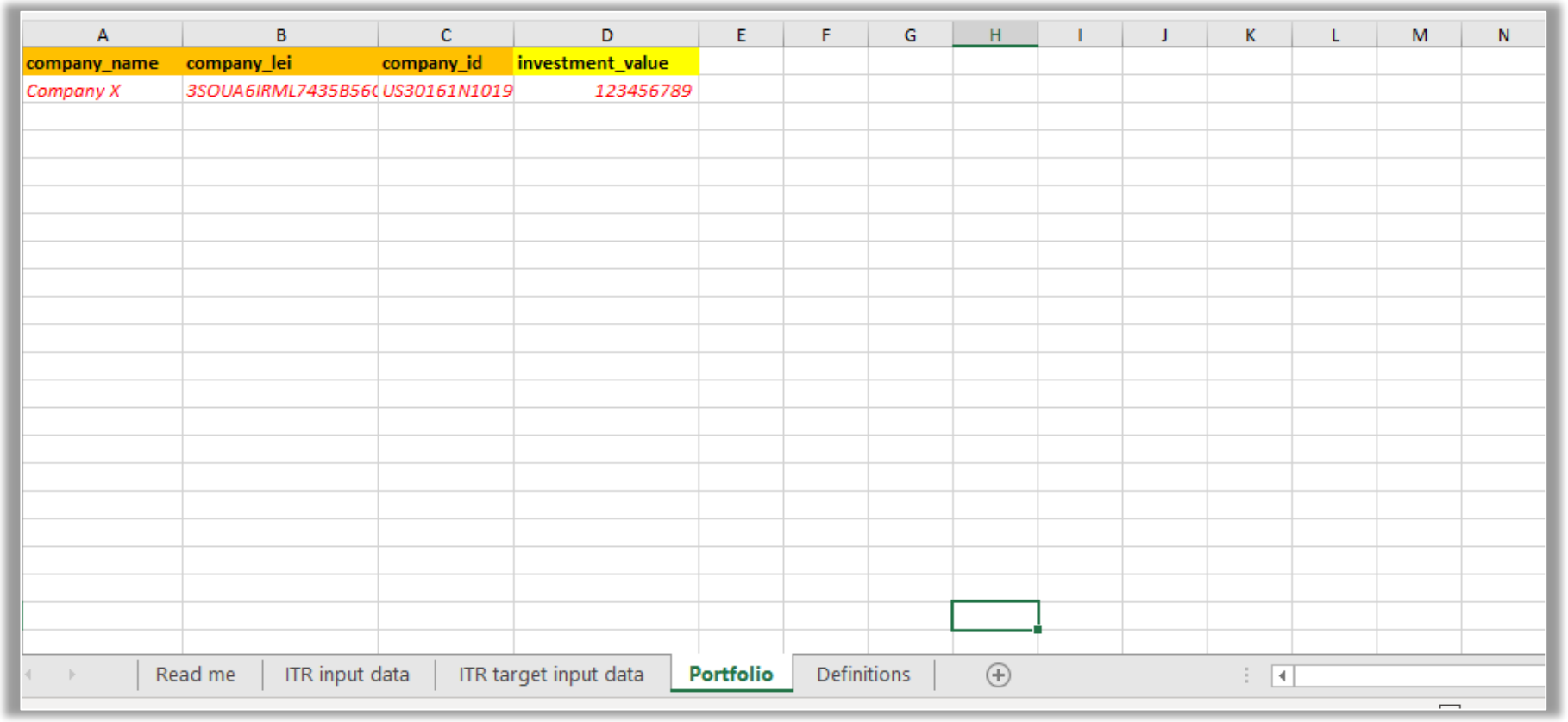
- Information on net zero-year, target type, scope, start year, base year, base year unit & quantity, reduction ambition
- Same identifiers (company name, LEI, id) used as in ITR input data sheet
- One row of target data per target of a company (absolute or intensity)
- Companies spanning multiple sectors can be split apart by sectors
- Sectoral components specify sector-specific target data (type, scope, year, qty, etc)

	A	B	C	D	E	F	G	H
1	company_name	company_lei	company_id	country	netzero_year	target_type	target_scope	target_start_year
97	Ørsted	W9NG6WMZIYEU8VEDOG48	DK0060094928+Electricity Utilities	DK	*2040*	intensity	S1+S2	*2019*
98	Ørsted	W9NG6WMZIYEU8VEDOG48	DK0060094928+Gas Utilities	DK	*2040*	intensity	S1+S2+S3	*2019*
99	Ørsted	W9NG6WMZIYEU8VEDOG48	DK0060094928+Gas Utilities	DK	*2040*	absolute	S3	*2019*
100	Ørsted	W9NG6WMZIYEU8VEDOG48	DK0060094928+Gas Utilities	DK	*2040*	absolute	S3	*2019*

	A	E	F	G	H	I	J	K	L	M	N	O
1	company_name	netzero_year	target_type	target_scope	target_start_year	target_base_year	target_base_year_qty	target_base_year_unit	target_year	target_reduction_ambition	pdf	page
97	Ørsted	*2040*	intensity	S1+S2	*2019*	2019	65	g CO2e/kWh	2025	85%	https://ors	5
98	Ørsted	*2040*	intensity	S1+S2+S3	*2019*	2019	214	g CO2e/kWh	2040	99%	https://ors	5
99	Ørsted	*2040*	absolute	S3	*2019*	2019	34.6	Mt CO2e	2032	50%	https://ors	5
100	Ørsted	*2040*	absolute	S3	*2019*	2019	30.4	Mt CO2e	2040	90%	https://ors	5

Portfolio Data

- Information on the companies in your portfolio with the respective investment value
- One row per company in your portfolio



company_name	company_lei	company_id	investment_value
Company X	3SOUA6IRML7435B56(	US30161N1019	123456789

Read me | ITR input data | ITR target input data | Portfolio | Definitions

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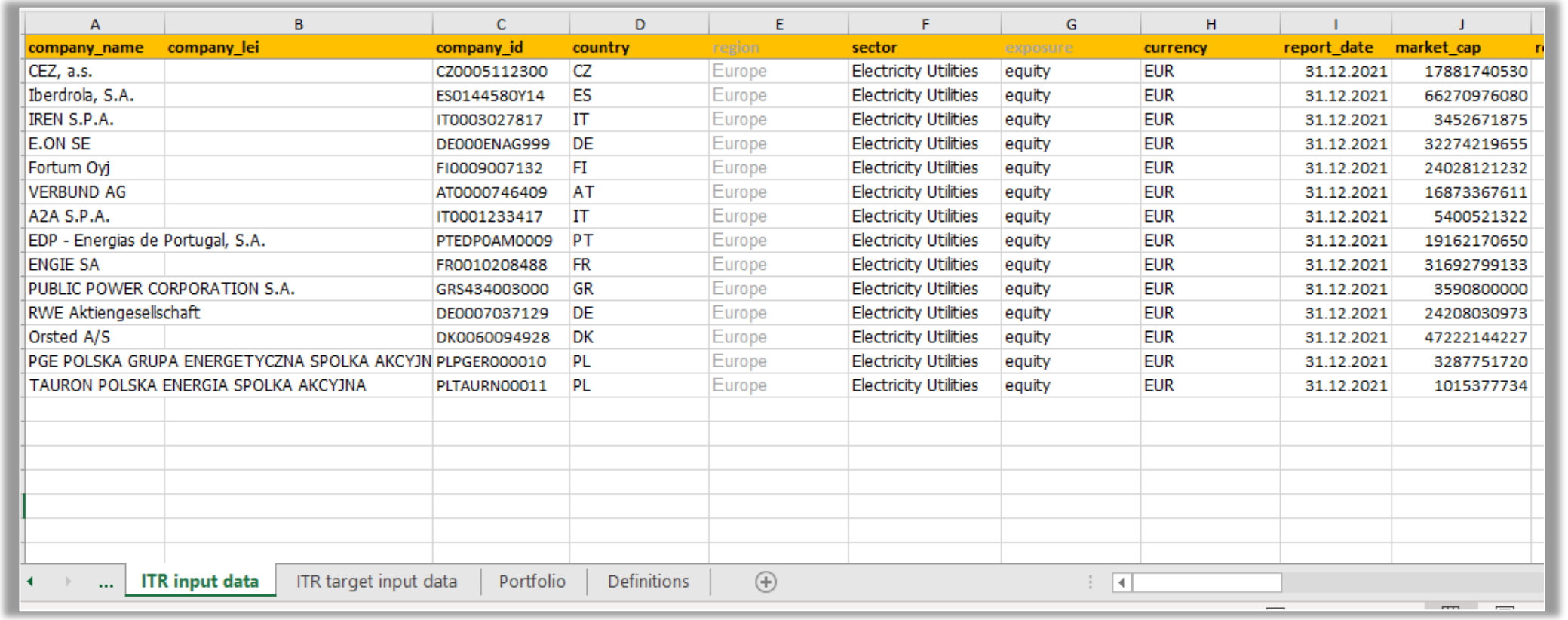
Example



company_name	company_lei	company_id	country	region	sector	exposure	currency	report_date	market_cap
CEZ, a.s.		CZ0005112300	CZ	Europe	Electricity Utilities	equity	EUR	31.12.2021	17881740530
Iberdrola, S.A.		ES0144580Y14	ES	Europe	Electricity Utilities	equity	EUR	31.12.2021	66270976080
IREN S.P.A.		IT0003027817	IT	Europe	Electricity Utilities	equity	EUR	31.12.2021	3452671875
E.ON SE		DE000ENAG999	DE	Europe	Electricity Utilities	equity	EUR	31.12.2021	32274219655
Fortum Oyj		FI0009007132	FI	Europe	Electricity Utilities	equity	EUR	31.12.2021	24028121232
VERBUND AG		AT0000746409	AT	Europe	Electricity Utilities	equity	EUR	31.12.2021	16873367611
A2A S.P.A.		IT0001233417	IT	Europe	Electricity Utilities	equity	EUR	31.12.2021	5400521322
EDP - Energias de Portugal, S.A.		PTEDP0AM0009	PT	Europe	Electricity Utilities	equity	EUR	31.12.2021	19162170650
ENGIE SA		FR0010208488	FR	Europe	Electricity Utilities	equity	EUR	31.12.2021	31692799133
PUBLIC POWER CORPORATION S.A.		GRS434003000	GR	Europe	Electricity Utilities	equity	EUR	31.12.2021	3590800000
RWE Aktiengesellschaft		DE0007037129	DE	Europe	Electricity Utilities	equity	EUR	31.12.2021	24208030973
Orsted A/S		DK0060094928	DK	Europe	Electricity Utilities	equity	EUR	31.12.2021	47222144227
PGE POLSKA GRUPA ENERGETYCZNA SPOLKA AKCYJN		PLPGER000010	PL	Europe	Electricity Utilities	equity	EUR	31.12.2021	3287751720
TAURON POLSKA ENERGIA SPOLKA AKCYJNA		PLTAURN00011	PL	Europe	Electricity Utilities	equity	EUR	31.12.2021	1015377734

... | ITR input data | ITR target input data | Portfolio | Definitions

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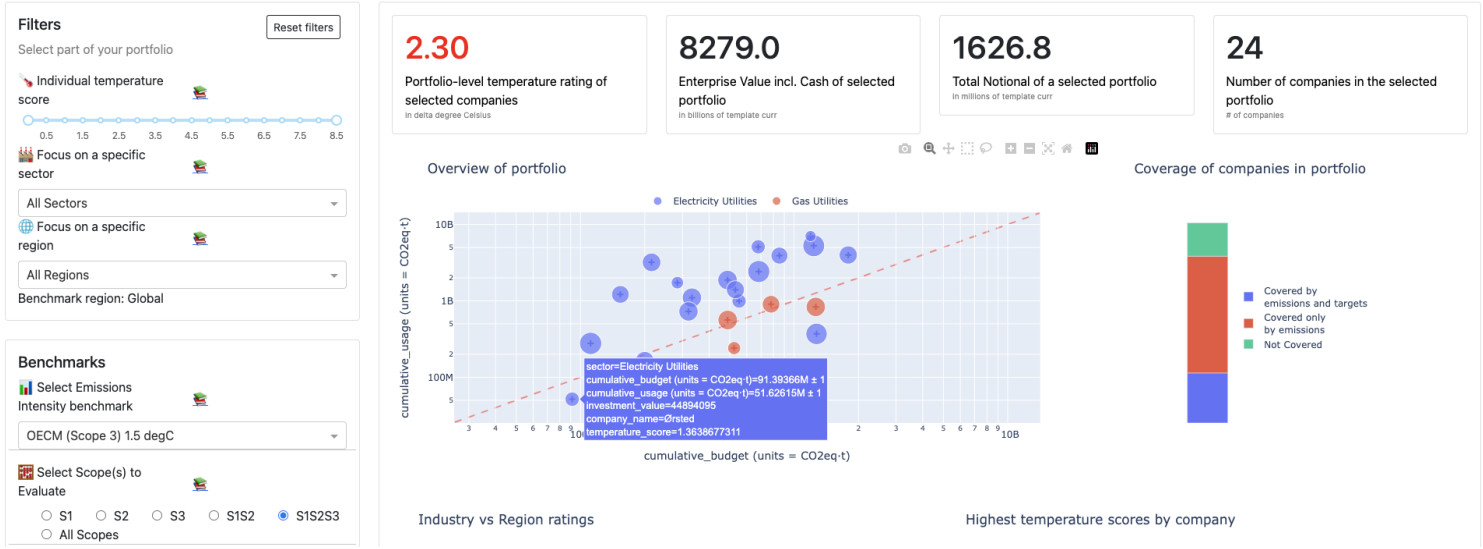
SAT Tool – Live Demo

Results

Scope-based Alignment

S1+S2+S3



S1+S2

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Results

Sector-based Alignment

Electricity Utilities

Gas Utilities

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Feedback

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We Welcome Your Participation

"The best way to predict the future is to create it"

If you are not satisfied with the commercial or proprietary tools available to you for setting your targets and implementing your Net Zero commitments, join the OS-Climate Sector Alignment Tool Project, contributing some time from your:

- Software developers.
- Data Engineers.
- SMEs, including sector specialists.

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Thank You!