

# SBTi Finance Tool

User Workshop

13 October 2020



SCIENCE  
BASED  
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

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Eoin White & Daan van de Meeberg

PARTNER ORGANIZATIONS

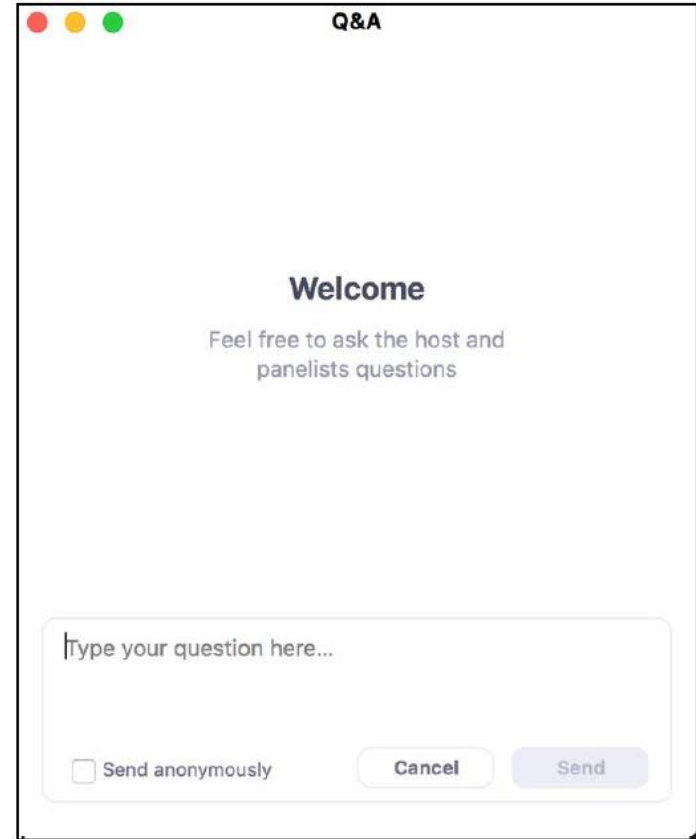


IN COLLABORATION WITH



# House keeping

- Ask questions using Q&A box
- Webinar is being **recorded** - Link to recording emailed tomorrow
- Slides emailed tomorrow



The image shows a screenshot of a Q&A box interface. At the top, there are three colored circles (red, yellow, green) and the text "Q&A". Below this, the word "Welcome" is centered in bold. Underneath, the text "Feel free to ask the host and panelists questions" is centered. At the bottom, there is a text input field with the placeholder text "Type your question here...". Below the input field, there is a checkbox labeled "Send anonymously" and two buttons: "Cancel" and "Send".

# Agenda

- Introduction (5 min)
- SBTi Finance Framework (5 min)
- SBTi Finance Tool (10 min)
- Analysis & Engagement Strategy (10 min)
- Method (10 min)
- Next steps (2 min)
- Q&A (18 min)

# Science Based Target initiative (SBTi)

## All Companies

**1,010**  
Committed

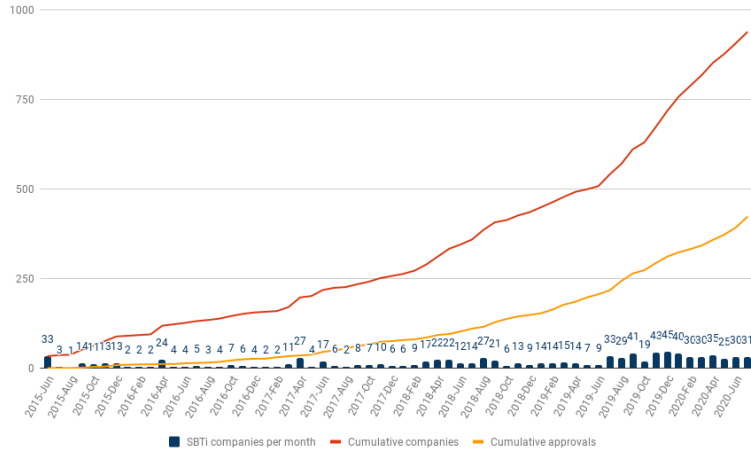
**~36**  
join per month

**485**  
Approved

## Financial Institutions

**60**  
Committed

Number of companies that have set or committed to set SBTs since June 2015



# SCIENCE-BASED TARGETS FOR FINANCIAL INSTITUTIONS

In 2018, the SBTi launched a project to help financial institutions align their lending and investment portfolios with the ambition of the Paris Agreement.

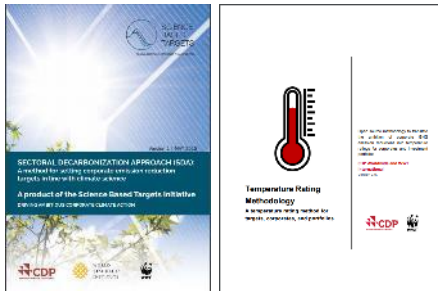
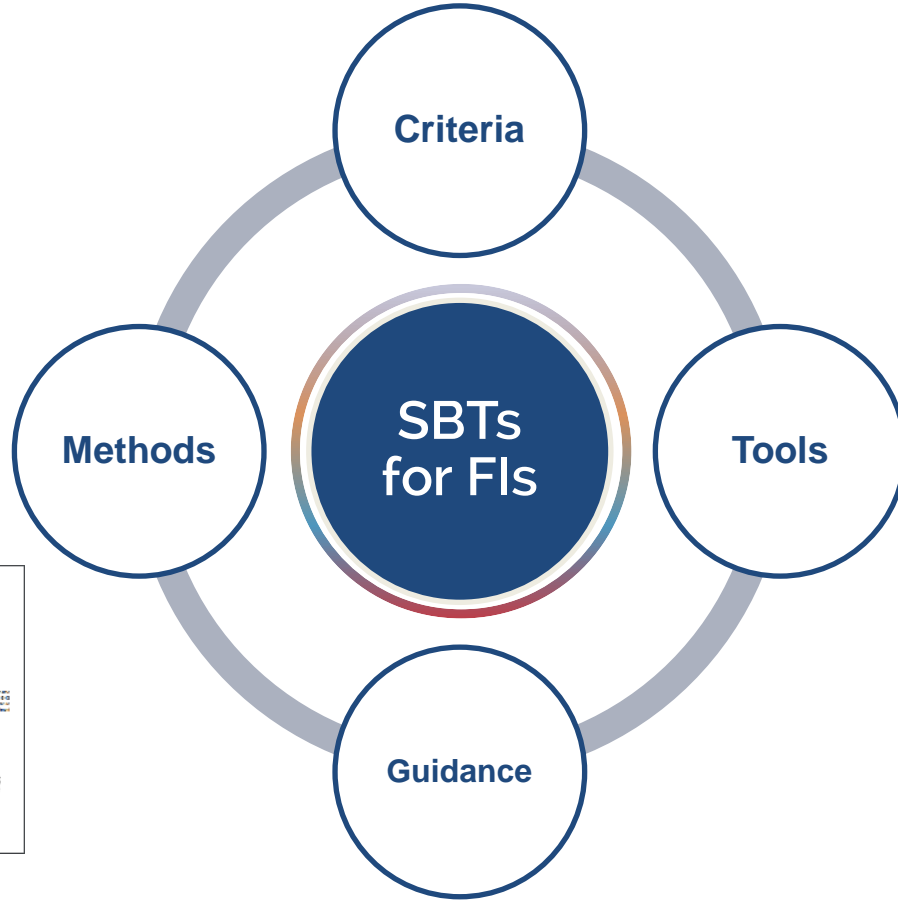
The primary audience includes commercial banks, asset managers, asset owners, and mortgage real estate investment trusts (REITs).



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# SBTi Finance Framework | Framework Components




# SBTi Finance Framework | 3 Methods for Finance Sector Targets


For the first phase of this project, the SBTi supports three methods for financial institutions. The SBTi developed criteria specific to these three methods.



**Sectoral  
Decarbonization  
Approach (SDA)**



**SBT Portfolio  
Coverage  
Approach**



**Temperature  
Rating Approach**

# SBTi Finance Framework | Method & Asset Class Coverage Links

Asset Class	Method	Description
Real Estate	Sector Decarbonization Approach (SDA)	Emissions-based physical intensity targets are set for non-residential buildings' intensity and total GHG emissions.
Mortgages	SDA	Emissions-based physical intensity targets are set for residential buildings' intensity and total GHG emissions.
Electricity Generation Project Finance	SDA	Emissions-based physical intensity targets are set for electricity generation projects' intensity and total GHG emissions.
Corporate Instruments (equity, bonds, loans)	SDA	Emissions-based physical intensity targets are set at sector level within the portfolio for sector where sectoral decarbonization approaches are available.
	SBT Portfolio Coverage	Financial institutions engage a portion of their investees to have their own science-based targets such that they will reach 100% coverage by 2040.
	Temperature Rating	This approach enables financial institutions to determine the current temperature rating of their portfolio and take actions to align their portfolios to ambitious long-term temperature goals by engaging with portfolio companies to set ambitious targets (e.g., 2.6°C in 2019 and 1.7°C in 2025).

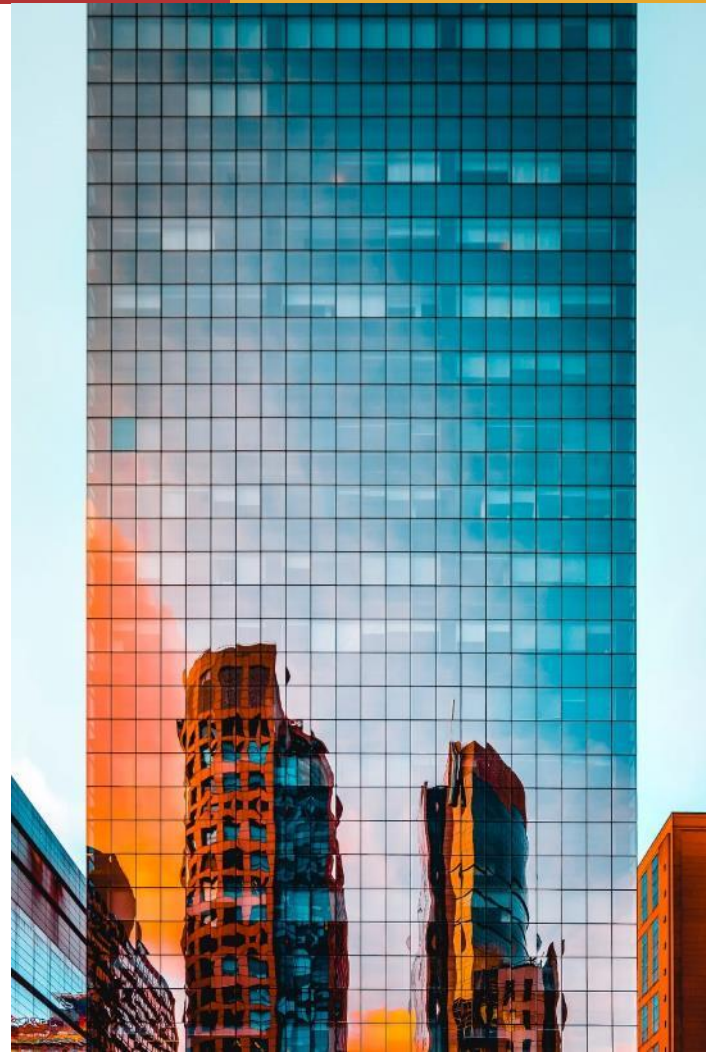


# SBTi Finance Framework | Criteria

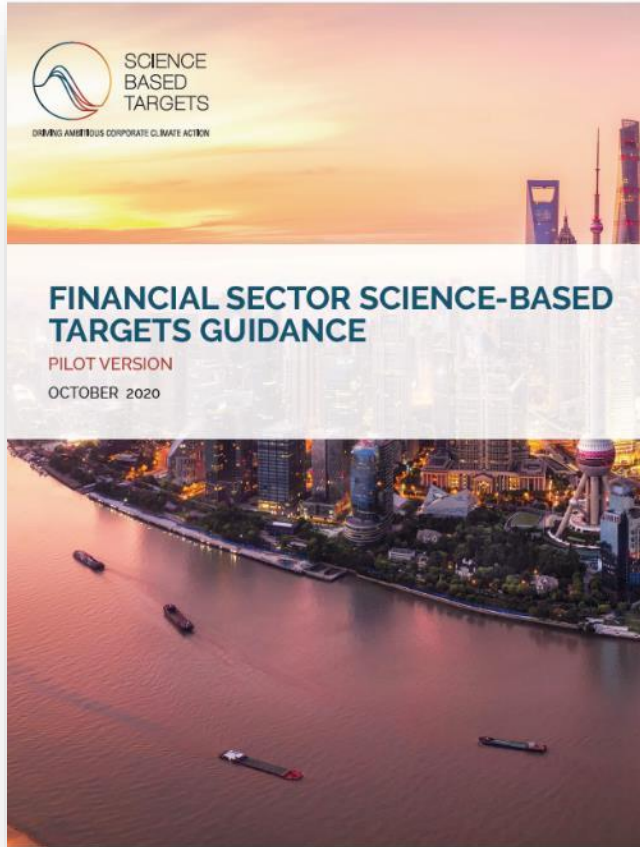
A financial institution's submission to SBTi will consist of **scope 1 and 2 targets and scope 3 portfolio targets** that meet SBTi criteria. Recommendations on best practices are also provided.

1. GHG Emissions Inventory and Target Boundary
2. Scope 1 and 2 Target Time Frame
3. Scope 1 and 2 Target Ambition
4. Scope 2
5. **Scope 3 – Portfolio Target Setting Requirements**
6. **Reporting**
7. Recalculation and Target Validity

**Sections 5 and 6** of the criteria are designed specifically for financial institutions' target setting, progress-tracking, and action reporting practices for their investment and lending activities.



# SBTi Finance Framework | Guidance



## 8 Case Studies

Institution	Method
Amundi	Temperature Rating Method
Bank J. Safra Sarasin	SDA for Real Estate
Storebrand	SDA for Real Estate
Eurazeo	SBT Portfolio Coverage
La Banque Postale	SBT Portfolio Coverage & SDA
Mizuho Financial Group	SDA for Electricity Generation Project Finance
De Volksbank	SDA for Mortgages
Wells Fargo & Company	PCAF

# Launching the pilot target validation phase for financial institutions

1.



COMMIT

2.



DEVELOP

3.



SUBMIT

Submissions from the **first 20 financial institutions** will be assessed **free of charge**.

Materials are distributed via the project website:  
<https://sciencebasedtargets.org/financial-institutions/>

Contact [targets@sciencebasedtargets.org](mailto:targets@sciencebasedtargets.org) to express your interest!

Starting from **October 1<sup>st</sup> 2020**, FIs have up to **2 years** to have their targets approved and announced by SBTi once they commit.

**Previously-committed FIs** will have **24 months from October 1<sup>st</sup> 2020** to submit targets.

4.



COMMUNICATE

5.



DISCLOSE



SCIENCE  
BASED  
TARGETS

# SBTi Finance Tool

## SBTi Finance Tool | Objectives

Methodologies: Temperature Rating & Portfolio Coverage

- Open Source – continued development
- Widely Distributed – greater impact
- Transparent – from corporate ambition through to portfolio temperature score
- Data Agnostic – any data provider & own data lake
- Any User Interface – service provider & homegrown portfolio management solutions
- Workflow Tool for:
  - Portfolio managers & CIO
  - ESG & Financial analysts
  - Risk management & Compliance

# SBTi Finance Tool | Development Team

- Science Based Target initiative (SBTi)
  - WWF (project manager)
  - CDP
  - World Resources Institute
- Developers
  - Ortec Finance
  - OS-Climate
- Data & Service Providers
  - Bloomberg
  - CDP
  - ISS ESG
  - MSCI
  - Trucost
  - Urgentem
- Users
  - Net-Zero Asset Owner Alliance



**Bloomberg**

**ISS ESG**

**MSCI**

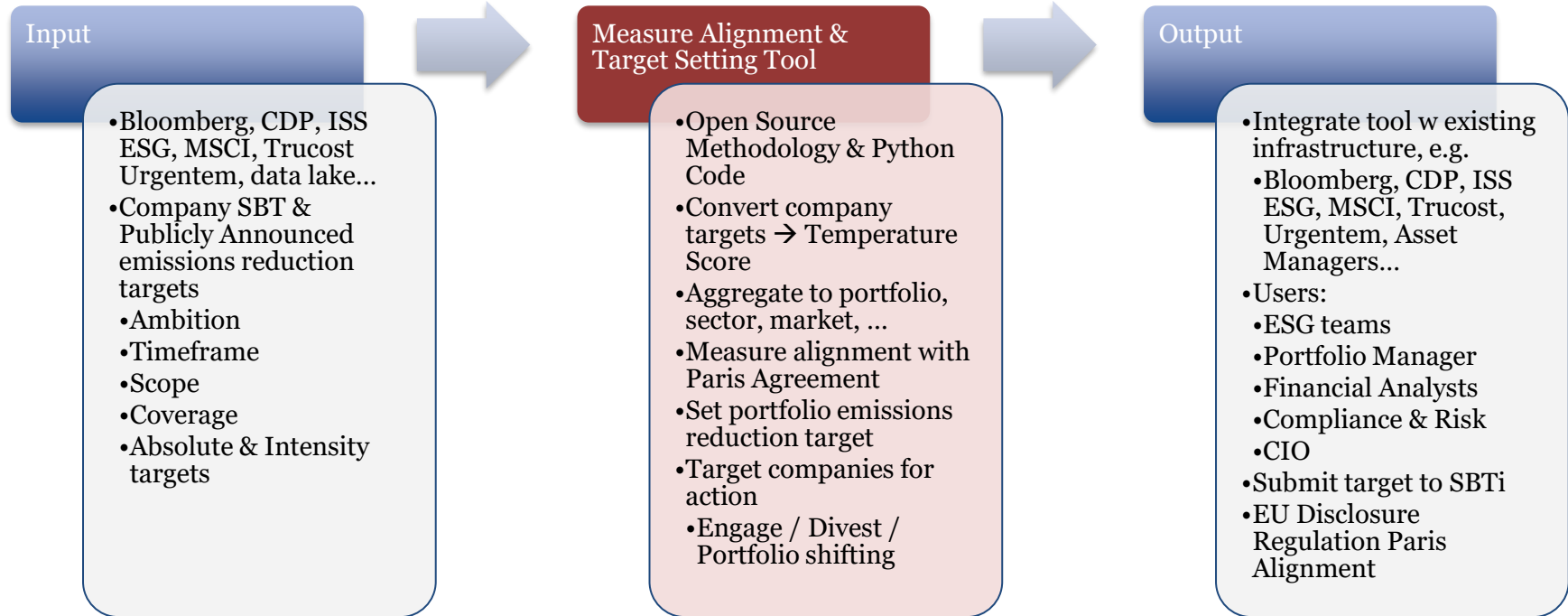
**CDP**  
DISCLOSURE INSIGHT ACTION

**Trucost**  
ESG Analysis

**S&P Global**

**URGENTEM**

# SBTi Finance Tool | Structure





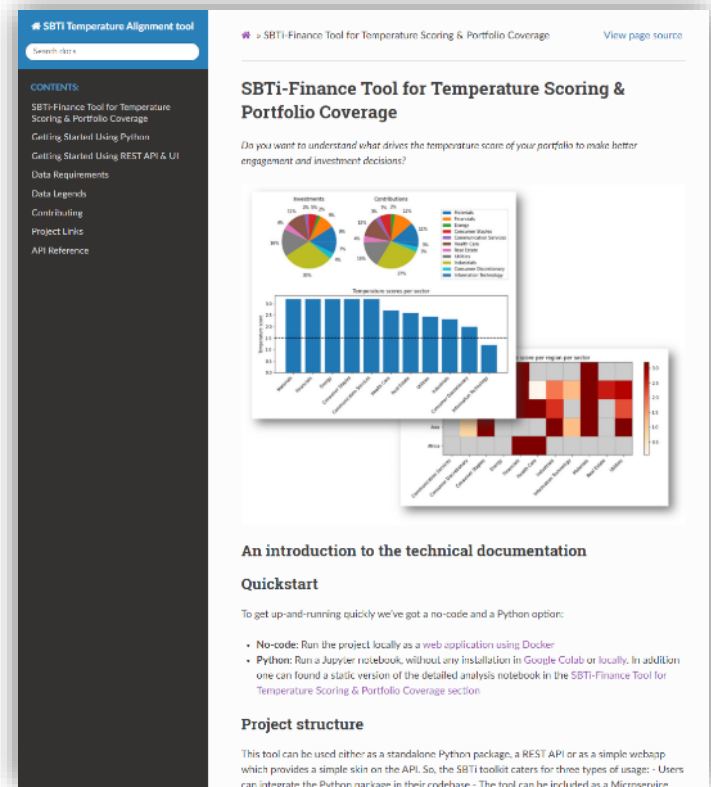
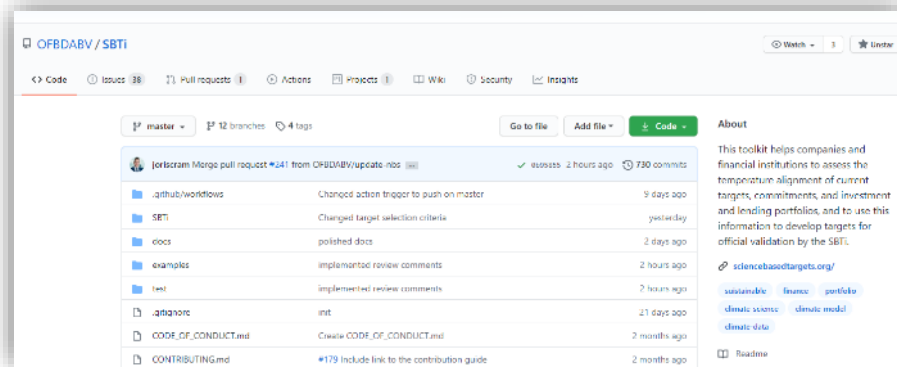
# SBTi Finance Tool

## Objective – Integrate into:

- Commercial platforms
- Asset managers' in-house solutions
- Via Python or API

## Learn & Test the Tool

- Interactive Jupyter Notebook – [Analysis Workflow Example](#)
- Tool website: <https://sciencebasedtargets.org/finance-tool/>
- Technical Documentation - <http://getting-started.sbti-tool.org/>
- GitHub Repository for Code - <http://www.sbti-tool.org/>



## An introduction to the technical documentation

### Quickstart

To get up-and-running quickly we've got a no-code and a Python option:

- **No-code:** Run the project locally as a web application using Docker
- **Python:** Run a Jupyter notebook, without any installation in Google Colab or locally. In addition one can found a static version of the detailed analysis notebook in the SBTi-Finance Tool for "Temperature Scoring & Portfolio Coverage" section

### Project structure

This tool can be used either as a standalone Python package, a REST API or as a simple webpage which provides a simple skin on the API. So, the SBTi toolkit caters for three types of usage: - Users can integrate the Python package in their codebase. - The tool can be included as a Microservice.



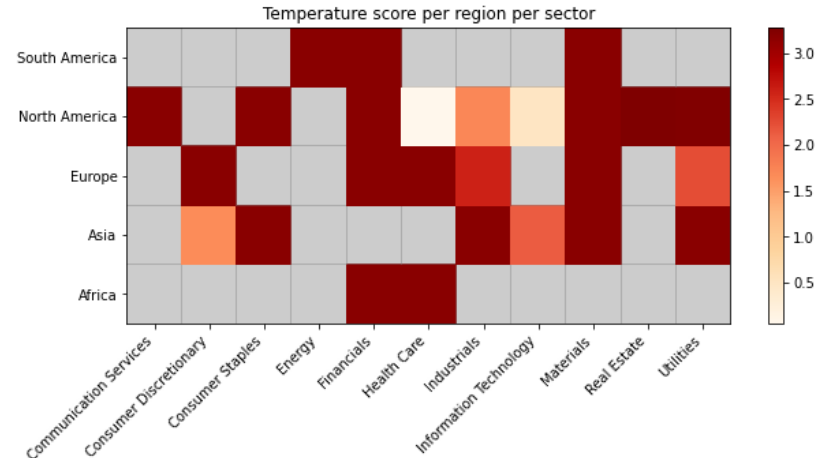
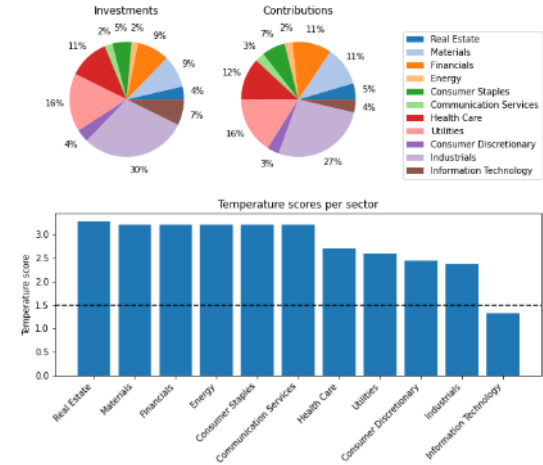
# SBTi Finance Tool | What Can We Use It For?

Portfolio manager / analyst analyzing:

- **companies, sectors, countries, investment strategies** and portfolios to
- understand how they **contribute to climate change.**

You can for example:

- Measure a **portfolio's temperature score**
- Identify **biggest contributors** – e.g. company, country and sector basis
- **Strategic allocation** and securities selection
- Analyze effects of changes in a portfolio
- Model **impact of engagement on temperature score**
- **Plan engagement strategies** based on your modelling
- Help you create an action plan for reaching your emission reduction target



# SBTi Finance Tool | What data do we need?

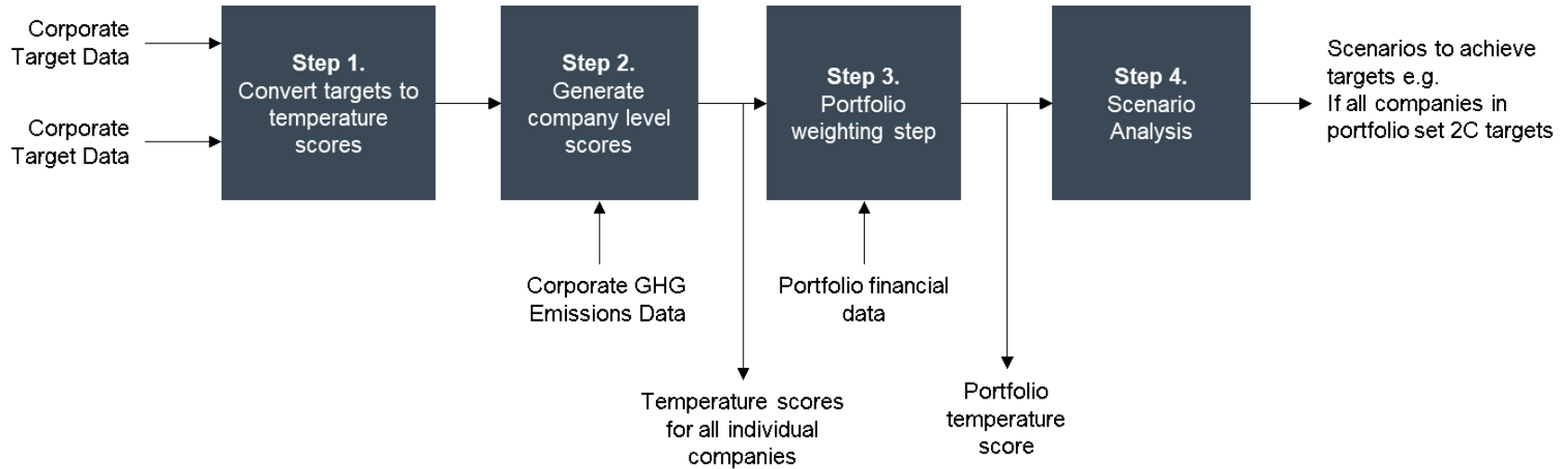
- Portfolio holdings
- Financials + Emissions
- Emissions Reduction Targets
- +4,000 publicly disclosed targets
- +480 SBTi approved target

	A	B	C	D	E	F
1	company_name	company_id	company_isin	weights	investment_value	engagement_target
2	Advanced Micro Devices	US0079031078	US0079031078	6.36%	35000000	true
3	Adobe Systems Inc.	US00724F1012	US00724F1012	1.82%	10000000	
4	Capgemini Group	FR0000125338	FR0000125338	1.82%	10000000	
5	Cisco Systems	US17275R1023	US17275R1023	1.82%	10000000	
6	Coca-Cola HBC AG	CH0198251305	CH0198251305	1.82%	10000000	
7	CVS Health	US1266501006	US1266501006	1.82%	10000000	
8	Danone	FR0000120644	FR0000120644	1.82%	10000000	
9	Dell Technologies	US24703L1035	US24703L1035	1.82%	10000000	
10	Delta Electronics	TW0002308004	TW0002308004	1.82%	10000000	

	A	I	J	K	L	M	N	O	P	Q
1	company_name	industry_level_4	sector	ghg_s1s2	ghg_s3	company	company_m	company_enterprise_value	company_total_assets	company_cash_eq
2	Advanced Micro Devices, Inc		Industrials	24965246,13	66591747,47	20248547997	10464805624	20370723453	814618,2057	4528467715
3	Adobe Systems Inc.		Utilities	1288468,92	1739806,666	276185899,6	170431377	348843699,9	27314,64803	69006941
4	Capgemini Group		Consumer Discretionary	230191,469	1285703,571	10283015132	3087133686	4800604057	343642,4737	1163119848

	A	C	D	E	F	G	H	I	J	K	L	M	N
1	company_name	target_type	intensity_metric	scope	coverage_s1	coverage_s2	coverage_s3	reduction_ambition	base_year	end_year	start_year	base_year_ghg_s1	base_year_ghg_s2
2	Advanced Micro De	Absolute		S1+S2	1	1		0,3	2018	2025	2020	11000	1200
3	Adobe Systems Inc	Intensity	Revenue	S2		1		0,4	2015	2030	2019	1558	13333
4	Capgemini Group	Intensity	Revenue	S3			0,6	0,15	2018	2050	2018	1209218,586	2110267,414
5	Cisco Systems, Inc.	Intensity	Revenue	S1+S2+S3	0,95	0,95	0,5	0,91	2018	2035	2020	184098,8183	80204,18168
6	Coca-Cola HBC AG	Intensity	Revenue	S1+S2+S3	1	1	0,7	0,93	2015	2025	2016	27727,46028	236575,5397

# SBTi Finance Tool | Analysis Process



# SBTi Finance Tool | Temperature Score Calculation

## 1) Convert individual targets → Target Temperature Scores

- Target validation protocol – minimum quality criteria
- Regression models of estimated warming in 2100 from IPCC [scenarios](#)

## 2) Aggregate targets to company level scores

- Default score for no valid targets
- Weighted based on reported emissions
- → Company Temperature Scores

	Short-term 2021-2024	Mid-term 2025-2035	Long-term 2035-2050
Scope 1+2	Temp score	Temp score	Temp score
Scope 3	Temp score	Temp score	Temp score

## 3) Aggregate to portfolio, sector, market level Temperature Scores

- 7 aggregation methods: Weighted average TS, Total emissions weighted TS, market owned emissions weighted TS, total assets emissions weighted TS...
- Portfolio TS per scope & per time frame
- Portfolio coverage: companies that have SBTi-approved targets

## 4) What-if analysis

- 6 engagement scenarios – model effect on TS of companies setting targets
- → Design engagement strategy

# SBTi Finance Tool | Analysis Example

## Company Temp Score

Short-term 2021-2024		Mid-term 2025-2035	Long-term 2035-2050
Scope 1+2	Temp score	Temp score	Temp score
Scope 3	Temp score	Temp score	Temp score

## Portfolio Temp Score (50 company portfolio with randomized data)

```
▶ temperature_score.aggregation_method = PortfolioAggregationMethod.WATS  
aggregated_portfolio = temperature_score.aggregate_scores(amended_portfolio)  
print_aggregations(aggregated_portfolio)
```

```
⊙ Timeframe Scope Temp score  
mid S1S2 2.63  
mid S1S2S3 2.88
```

## Portfolio Coverage

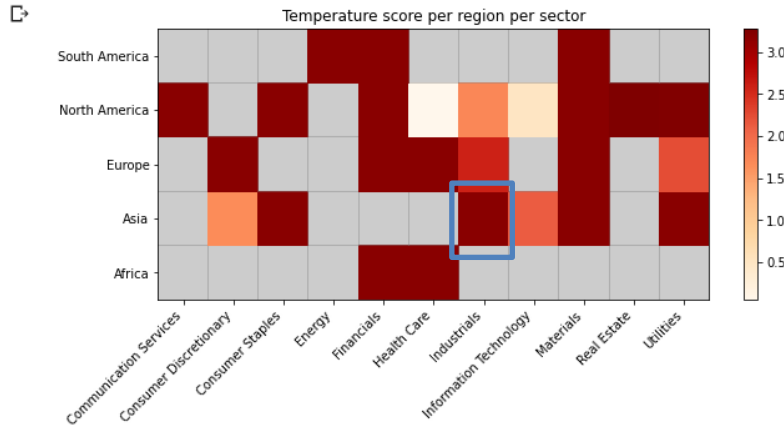
```
▶ portfolio_coverage_tvp = PortfolioCoverageTVP()  
coverage = portfolio_coverage_tvp.get_portfolio_coverage(amended_portfolio.copy(), temperature_score.aggregation_method)  
print("Part of portfolio with climate targets is {c:.2f}%".format(c=coverage))
```

```
⊙ Part of portfolio with climate targets is 35.45%
```

# Where are my hot spots?

## Heat map

```
[13] analysis_parameters = ([ETimeFrames.MID], [EScope.S1S2], grouping)  
plot_grouped_heatmap(grouped_aggregations, analysis_parameters)
```

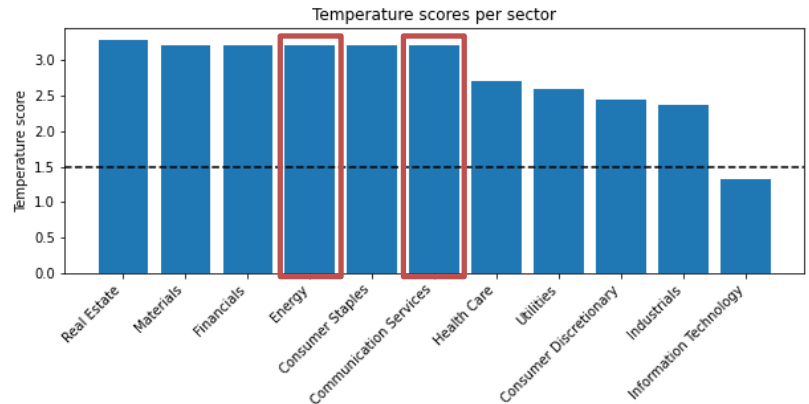
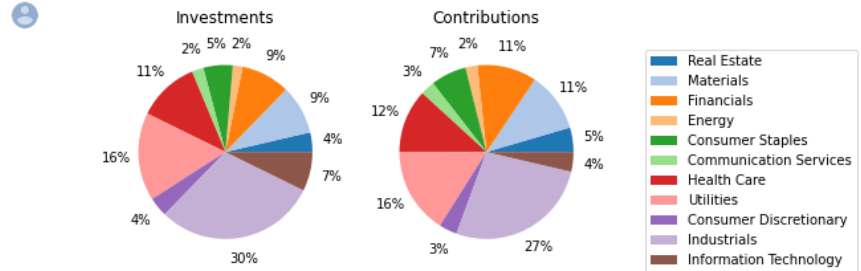


## Focus on

- Asian Industrials
- Consumer staples
- Communication services
- Energy

## Sector analysis

```
plot_grouped_statistics(aggregated_portfolio, company_contributions, analysis_parameters)
```



# Which companies should I engage with?

Analyze temperature score contribution & ownership % of companies in my portfolio

```
company_contributions[['company_name', 'company_id', 'contribution', 'temperature_score', 'ownership_percentage'],
```

	company_name	company_id	contribution	temperature_score	ownership_percentage	portfolio_percentage
0	Company N	FR0000000014	9.52	3.20	0.19	7.82
1	Company AG	US0079031078	3.29	1.36	0.33	6.36
2	Company Q	CA0000000017	2.66	3.20	4.81	2.18
3	Company AO	TW0002308004	2.65	3.83	0.01	1.82
4	Company AM	FR0000120644	2.34	3.38	12.25	1.82
5	Company U	US0000000021	2.32	3.36	0.54	1.82
6	Company AH	US00724F1012	2.29	3.31	5.87	1.82
30	Company C	IT0000000003	2.21	3.20	0.34	1.82
25	Company AF	ID0000000032	2.21	3.20	0.97	1.82
26	Company G	CN0000000007	2.21	3.20	0.05	1.82

## SBTi Finance Tool | What-if Scenarios

1: Engage companies to set **2°C targets**. This means that the score of all companies that didn't yet set a target will be set to 2°C.

2: Engage companies to set **well below 2°C targets**. The maximum score for all companies that have set targets will be capped at 1.75°C.

3a: Engage the **top 10** contributors to set **2 °C targets**.

3b: Engage the **top 10** contributors to have set **well below 2°C targets**. This means that the maximum score for all the targets of these companies will be capped at 1.75°C.

4a: Engage the **selected** companies to set **2°C targets**.

4b: Engage the **selected** companies to set **well below 2°C targets**. This means that the maximum score for all the targets of these companies will be capped at 1.75°C.

Put Company Q & Company AM into our engagement **scenario 4a**: “Engage to encourage companies to set **2°C targets**”.



# What is the impact on my portfolio TS?

## Modelling 2 companies in a 50-company portfolio

```
[20] scenario_portfolio = portfolio.copy()
      scenario_portfolio.loc[scenario_portfolio['company_id'] == 'CA0000000017', 'engagement_target'] = True
      scenario_portfolio.loc[scenario_portfolio['company_id'] == 'FR0000120644', 'engagement_target'] = True
```

```
▶ scenario_companies = [SBTi.interfaces.PortfolioCompany.parse_obj(company) for company in scenario_portfolio.to_dict(orient="records")]
  scenario_data = SBTi.utils.get_data([provider], scenario_companies)
```

```
temperature_score.scenario = scenario
scenario_companies = SBTi.utils.dataframe_to_portfolio(scenario_portfolio)
scenario_scores = temperature_score.calculate(data_providers=[provider], portfolio=scenario_companies)
scenario_aggregated = temperature_score.aggregate_scores(scenario_scores)
print_scenario_gain(aggregated_portfolio, scenario_aggregated)
```

👤 Actual portfolio temperature score

Timeframe	Scope	Temp score
mid	S1S2	2.63

Scenario portfolio temperature score

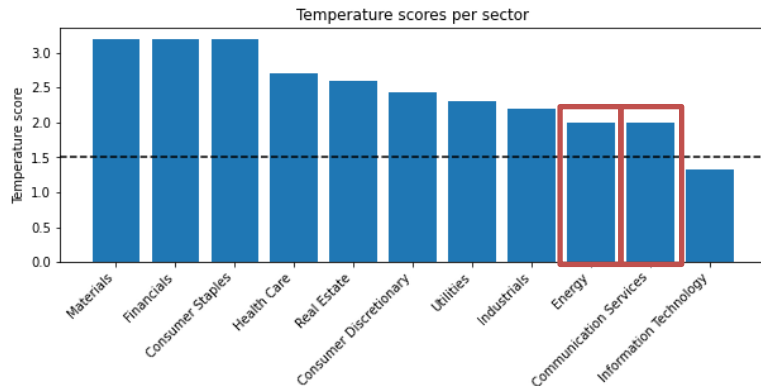
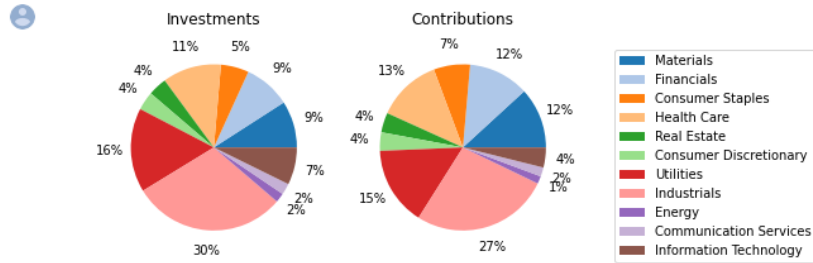
Timeframe	Scope	Temp score
mid	S1S2	2.46



# What is the impact on a sector level?

What is the likelihood that I can reach a certain target with my engagement strategy?

```
[23] scenario_contributions = collect_company_contributions(scenario_aggregated, scenario_scores, analysis_parameters)
plot_grouped_statistics(scenario_aggregated, scenario_contributions, analysis_parameters)
```



## Results:

I need a more ambitious engagement strategy to reach a 1.5°C target

## Solution:

Model other scenarios with different companies and/or focus on a sector or region ...

# SBTi Finance Tool | Transparent Output Data

## Target Data Input

	A	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	company_name	time_frame	scope	target_type	intensity_metric	coverage_s1	coverage_s2	coverage_s3	reduction_ambition	base_year	base_year_ghg_s1	base_year_ghg_s2	base_year_ghg_s3	start_year	end_year	achieved_reduction
2	Company AG	MID	S1S2	Absolute	nan	1	1		0,3	2018	11000	1200		2020	2025	0,4 r
3	Company AH	MID	S1S2	intensity	Revenue	1	1	0,9	0,24	2014	2784330,187	4565669,813		2018	2030	0,853 r
4	Company AI	MID	S1S2	absolute												r
5	Company AJ	MID	S1S2	Intensity	Revenue	0,95	0,95	0,5	0,91	2018	184098,8183	80204,18168		2020	2035	0,04 r
6	Company AK	MID	S1S2	Intensity	Revenue	1	1	0,7	0,93	2015	27727,46028	236575,5397		2016	2025	0,03 r
7	Company AL	MID	S1S2	Intensity	Revenue	1	1		0,76	2015	0	0		2015	2025	0,08 r
8	Company AM	MID	S1S2	intensity	Revenue	0,65	0,65		0,1625	2013	0	0	21752,5	2015	2025	0,358 r
9	Company AN	MID	S1S2	absolute												r
10	Company AO	MID	S1S2	intensity	Revenue	0,371359416	0,371359416		0,12622201	2006	413573,8394	244312,1606		2019	2030	0,326 r

## Emissions, Fundamental & Financial Inputs

	A	S	T	U	V	W	AB	AC	AD	AE	AF	AG
1	company_name	ghg_s1s2	ghg_s3	country	region	sector	company_revenue	company_market_cap	company_enterprise_value	company_total_assets	company_cash_equivalents	sbti_validated
2	Company AG	24965246,13	66591747,47	United States	North America	Industrials	20248547997	10464805624	20370723453	814618,2057	4528467715	SANT
3	Company AH	1288468,92	1739806,666	United States	North America	Utilities	276185899,6	170431377	348843699,9	27314,64803	69006941	SANT
4	Company AI	230191,469	1285703,571	France	Europe	Consumer Discretionary	10283015132	3087133686	4800604057	343642,4737	1163119848	SANT
5	Company AJ	178705,0618	476673,9446	United States	North America	Industrials	1860376238	1395966781	1849921444	159262,6094	117630751,5	SANT
6	Company AK	97771,83581	260794,4407	Switzerland	Europe	Industrials	31781332590	20377644508	34890123636	43112605,78	28933197273	SANT
7	Company AL	466041.1002	1094183.453	United States of America	North America	Health Care	22080444056	89487875452	1.42816E+11	12916972.79	51876930016	SANT

## Temperature Scores

	A	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT
1	company_name	sr15	annual_reduction_rate	slope	samplesize	model	variable	param	intercept	r2	temperature_score
2	Company AG	Emissions Kyoto Gases	0,042857143	slope15	128	4 Emissions Kyoto Gases	-0,312328765	2,697261013	0,829523459		1,36
3	Company AH	INT.emKyoto_gdp	0,015	slope15	128	4 INT.emKyoto_gdp	-0,533878087	4,107377151	0,826692149		3,31
4	Company AI	Emissions Kyoto Gases		slope15	128	4 Emissions Kyoto Gases	-0,312328765	2,697261013	0,829523459		3,2
5	Company AJ	INT.emKyoto_gdp	0,053529412	slope15	128	4 INT.emKyoto_gdp	-0,533878087	4,107377151	0,826692149		1,25

# SBTi Finance Tool | Report Card

## Reporting to SBTi

- Example notebook for reporting and submitting targets to SBTi ([5\\_reporting.ipynb](#))
- Anonymized data-export – no need to disclose holdings

### Calculation settings:

```
Aggregation method: WATS
Default score: 3.20
```

```
Portfolio coverage is 35.45%
```

### Portfolio Temperature scores:

Timeframe	Scope	Temp score
mid	S1S2	2.63
mid	S1S2S3	2.88

### Percentage of score based on default:

Timeframe	Scope	% Default score
mid	S1S2	66.36
mid	S1S2S3	78.02

## Temperature scores per sector:

	Temp score
mid - S1S2	
Communication Services	3.20
Consumer Discretionary	2.44
Consumer Staples	3.20
Energy	3.20
Financials	3.20
Health Care	2.70
Industrials	2.36
Information Technology	1.32
Materials	3.20
Real Estate	3.28
Utilities	2.58

	Temp score
mid - S1S2S3	
Communication Services	3.20
Consumer Discretionary	3.08
Consumer Staples	3.20
Energy	3.20
Financials	3.11
Health Care	3.05
Industrials	2.72
Information Technology	2.15
Materials	3.20
Real Estate	3.21
Utilities	2.73

# SBTi Finance Tool | Reporting

## Save anonymized data for SBTi target validation

In order for the targets to be validated by SBTi, you can save your data locally. By running the anonymize function, you can replace company identifiers with meaningless substitutes.

```
[12] portfolio, provider = anonymize(portfolio, provider)
```

In order to store the portfolio and provider data locally, two options apply:

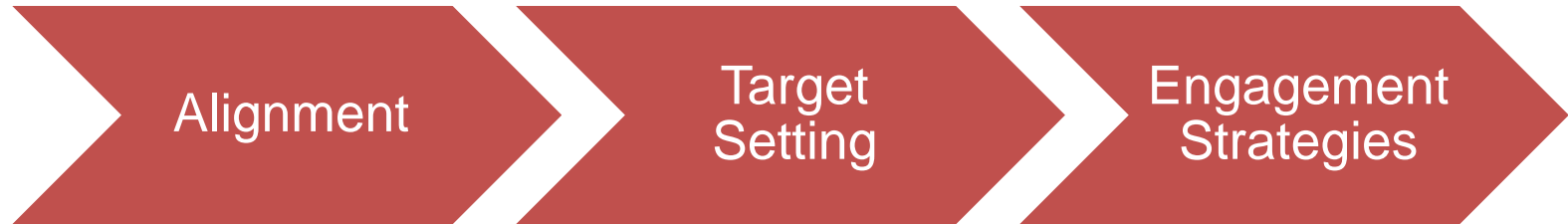
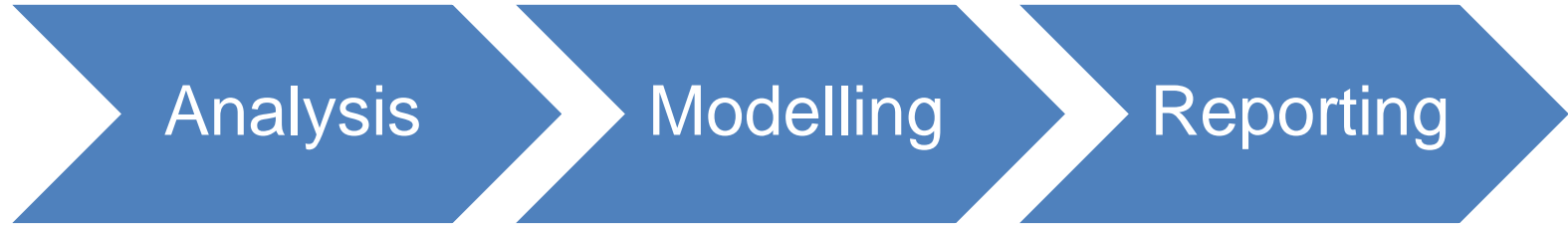
1. You are running the SBTi tool locally or from Google Colab
2. You are running the SBTi tool from a Docker container

If you run the SBTi tool locally or from Google Colab, you:

- Specify and filenames in the cell below
- Run the cell below

```
[13] portfolio_filename = 'portfolio.xlsx'  
provider_filename = 'provider.xlsx'  
portfolio.to_excel(portfolio_filename, index=False)  
  
writer = pd.ExcelWriter(provider_filename, engine='openpyxl')  
provider.data['fundamental_data'].to_excel(writer, sheet_name='fundamental_data')  
provider.data['target_data'].to_excel(writer, sheet_name='target_data')  
writer.save()
```

## SBTi Finance Tool | Solution



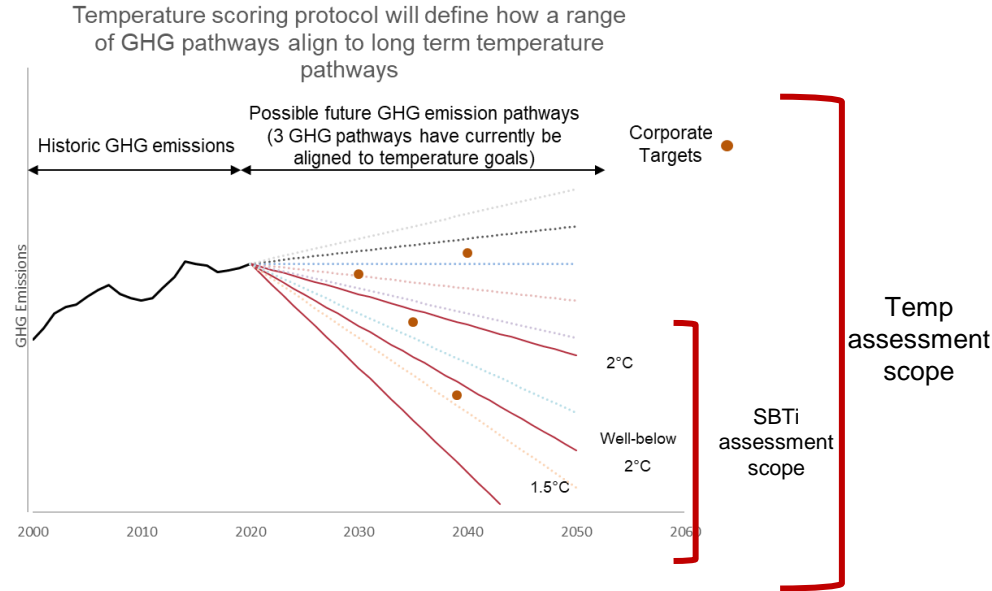
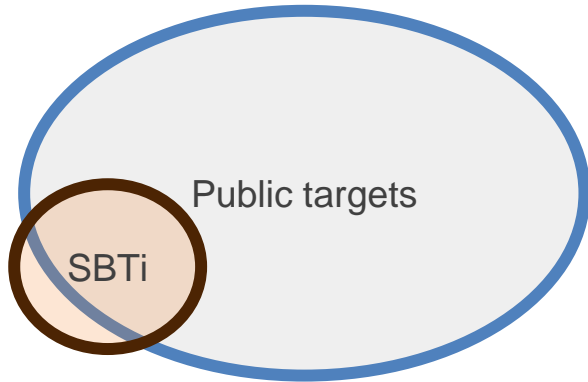


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# Overview of Temperature Scoring Methodology

# Methodology | Objectives

- ▼ The SBTi have determined the GHG pathways that are aligned to three specific temperature pathways: 2°C, well-below 2°C, 1.5°C;
- ▼ Temperature scoring will assess and rate corporate ambition against a wider range of temperature outcomes (1.5–4°C) . e.g. Company A's GHG emission reduction target of X% reduction in absolute emissions by 2025 implies their ambition is aligned to a Y°C world.





# Methodology | Objectives

- Assessing the ambition of corporate targets is complex: expressed with different units, over multiple timeframes covering various types of scopes
  - Scope Coverage: scope 1, scope 2, scope 1+2, scope 3, scope 1+2+3
  - Absolute/Intensity targets: many types of activity indicators e.g. per MWh, per revenue, per tonne of product
  - Timeframes: targets can be set anywhere from 2020-2050
- Translate:** the goal of a temperature rating is to translate targets into a single common and intuitive metric that is linked to the long-term temperature outcomes associated with the ambition of the target.

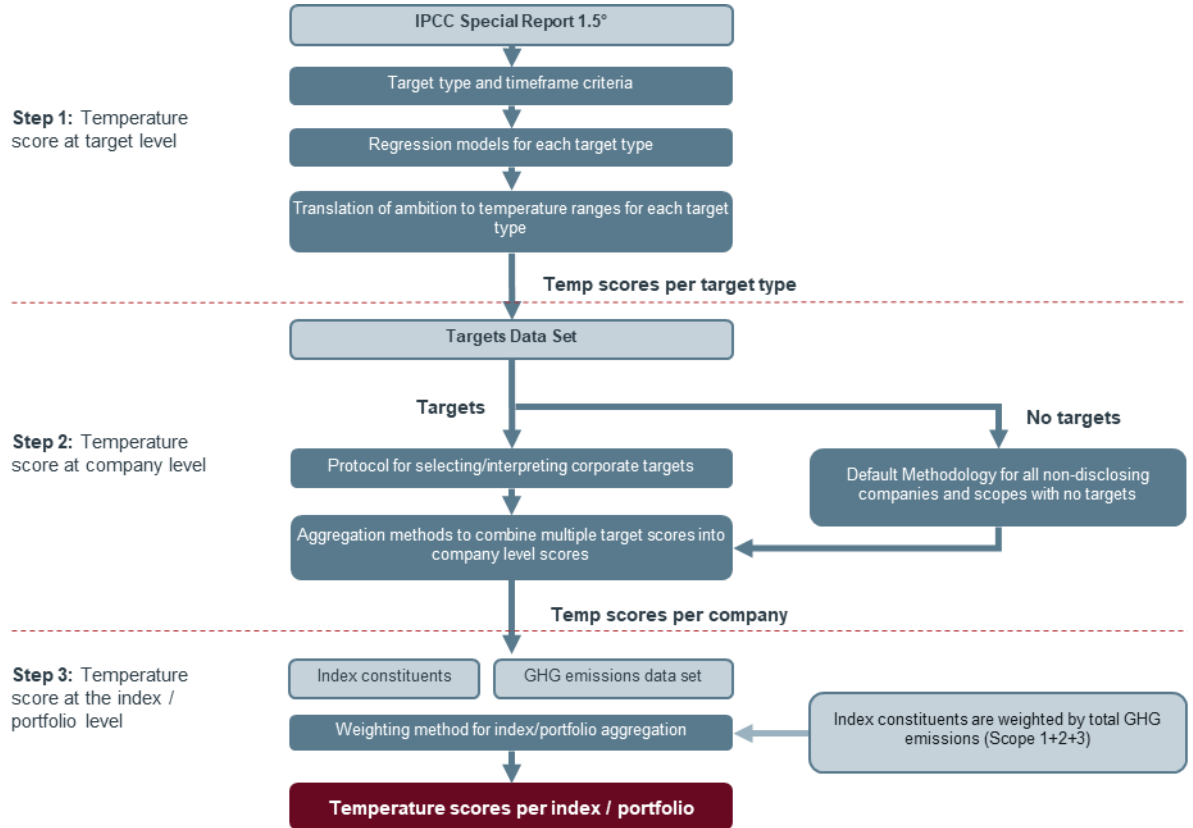
Example targets	Translated temperature scores
30% absolute reduction by 2025	1.8°C
4% year-on-year reduction by 2030	1.9°C
50% reduction per unit of revenue by 2030	2.1°C
25% reduction per MWh by 2025	3.1°C



# Methodology I Three Step Process

## Temperature scoring process

1. The protocol for interpreting corporate targets is applied to a cleaned target data.
2. Target scores are aggregated to produce company level scores for scopes and timeframes
3. Company scores are weighted and aggregated to produce portfolio level scores



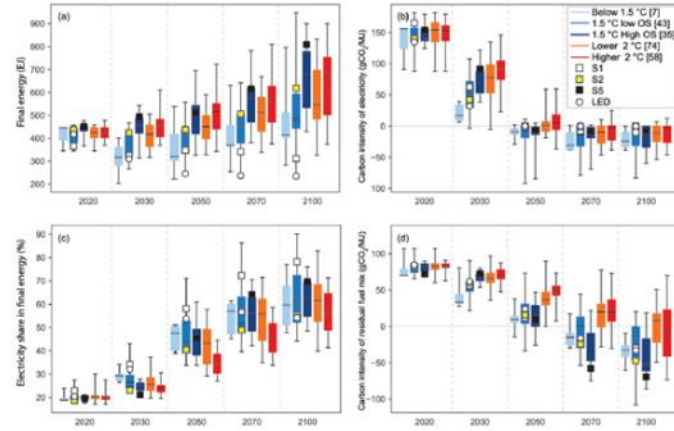
# Methodology I Step 1 Target Protocol

Method tests a hypothesis of a linear relationship between the change (slope) in common scenario metrics (e.g., absolute emissions; emissions/GDP) over specific timeframes relevant to corporate target setting horizons (e.g., 2020-2035) and the resulting global warming in 2100  
 -> Builds on previous work by IPCC and SBTi members

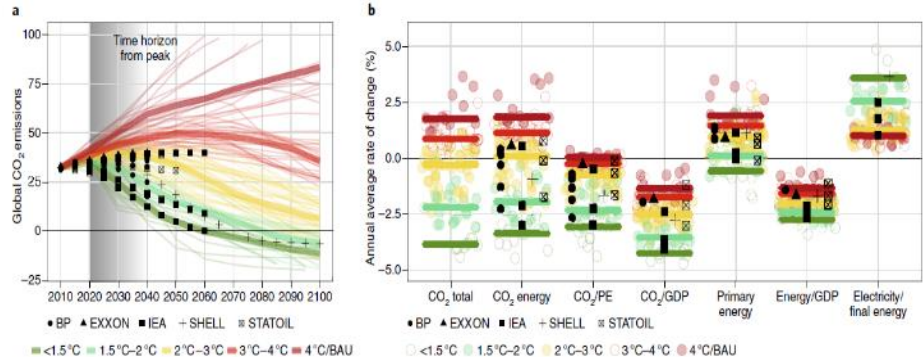
Regression models were developed for each unique combination of:

- key scenario variables/benchmarks; 6
- unique scenario subset (filtering by peak year, max CDR); 56
- key time horizons relevant to corporate targets, (5 to 30 years); 6

=> 56 x 6 x 6 unique regression models



**Figure:** Scenario variables in different timeframes by temperature outcome.  
**Source:** IPCC SR1.5, Chapter 2



**Figure:** Range of slopes for common scenario variables/benchmarks.  
**Source:** Weber et al. (2018) *Nature Climate Change*.

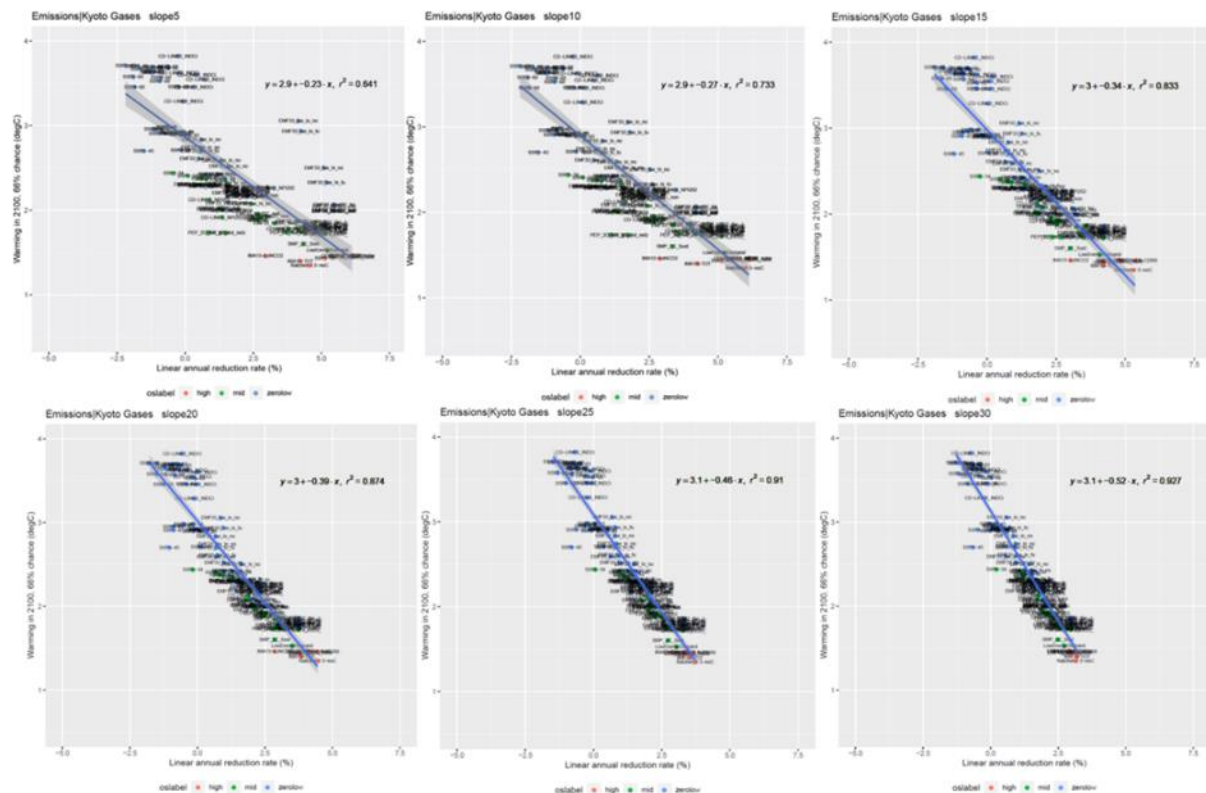
# Methodology | Step 1 Target Protocol

Final scenario set and time horizon chosen by combination of:

- goodness of fit (adj R<sup>2</sup>)
- alignment to SBTi's precautionary view of overshoot/CDR (max 10 Gt/yr)

Results:

- total 133 scenarios from SR1.5 ensemble
- Adj. R<sup>2</sup> ranges from
  - 0.71-0.85 over 15 years
  - 0.84-0.93 over 30 years

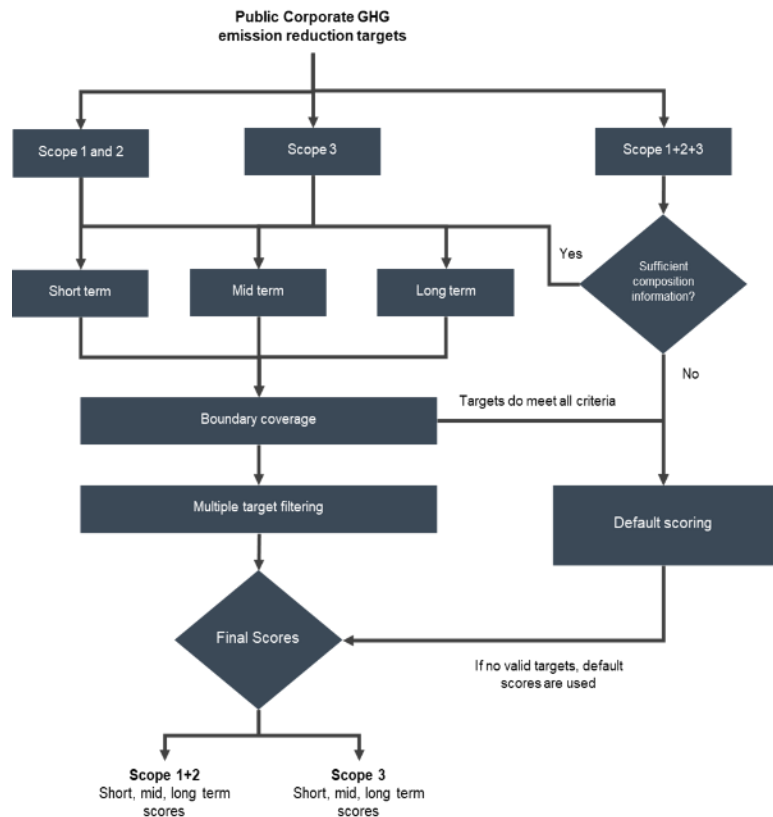


**Figure:** Regression results for chosen scenario set, 5-30 years, for global GHGs

# Methodology I Step 2 Company Protocol

## Step by Step guide

- Identify valid target types
- Classify companies by scope
- Classify companies by timeframe
- Apply boundary coverage criteria
- Multiple target filtering
  - Select target with highest boundary coverage
  - Select later target years
  - Absolute targets prioritised



## Methodology I Step 2 Company Protocol

**Outputs at a company level:** produce one temperature score for each scope and applicable timeframe.

	Short-term 2021-2024	Mid-term 2025-2035	Long-term 2035-2050
Scope 1+2 GHG: 450,000t	No target/ default score: <b>3.2°C</b>	Yes <b>1.8°C</b>	Yes <b>1.9°C</b>
Scope 3 GHG: 2,100,000t	No target/ default score: <b>3.2°C</b>	No target/ default score: <b>3.2°C</b>	No target/ default score: <b>3.2°C</b>
Scope 1+2+3 GHG: 2,550,000t	No target/ default score: <b>3.2°C</b>	GHG weighting applied to produce a composite score:  $(450,000 \times 1.8^\circ\text{C}) + (2,100,000 \times 3.2^\circ\text{C}) / 450,000 + 2,100,000 =$ <b>2.95°C</b>	GHG weighting applied to produce a composite score:  $(450,000 \times 1.9^\circ\text{C}) + (2,100,000 \times 3.2^\circ\text{C}) / 450,000 + 2,100,000 =$ <b>2.97°C</b>

## Methodology I Step 3 Portfolio Protocol

### 1. Definition of three weighting objectives & six principles, including

Support GHG disclosure by companies, allow portfolio alignment, standardisation of metrics, comparability, applicability, clarity etc.

### 2. Assessment of four weighting approaches against objectives & principles:

Option 1	Weighted average temperature score (WATS)
Option 2	Total emissions weighted temperature score (TETS)
Option 3	Market Owned emissions weighted temperature score (MOTS)
Option 4	Enterprise Owned emissions weighted temperature score (EOTS)
Option 5	<i>Enterprise Value + Cash Owned emissions weighted temperature score (ECOTS)</i>
Option 6	<i>Total Assets emissions weighted temperature score (AOTS)</i>
Option 7	<i>Revenue Owned emissions weighted temperature score (ROTS)</i>

# SBTi Finance Tool | Portfolio Aggregation Options

Aggregation Method	Description	Scope 1+2 temperature rating	Scope 1+2+3 temperature rating
Weighted Average Temperature Score (WATS) – Portfolio weights	The respective weighting is <b>the invested value</b> in a company divided by the total <b>value of the portfolio</b> .	2,39	2,66
Total Emissions Weighted Temperature Score (TETS)	The respective weighting is the <b>company's GHG emissions</b> divided by all investee companies' <b>GHG emissions</b> .	2,60	2,98
Market Owned emissions weighted temperature score (MOTS)	The respective weighting reflects <b>how much the portfolio owns of the company's GHG emissions</b> divided by <b>all GHG emissions owned by the portfolio</b> . The company emissions ownership is calculated as (invested value / <b>market cap</b> ) * GHG emissions	2,73	2,84
Enterprise Owned emissions weighted temperature score (EOTS)	The respective weighting reflects how much the portfolio owns of the company's GHG emissions divided by all GHG emissions owned by the portfolio. The company emissions ownership is calculated as (invested value / <b>enterprise value</b> ) * GHG emissions	2,71	2,85
Enterprise Value + Cash emissions weighted temperature score (ECOTS)	The respective weighting reflects how much the portfolio owns of the company's GHG emissions divided by all GHG emissions owned by the portfolio. The company emissions ownership is calculated as (invested value / <b>enterprise value + cash</b> ) * GHG emissions	2,76	2,87
Total Assets emissions weighted temperature score (AOTS)	The respective weighting reflects how much the portfolio owns of the company's GHG emissions divided by all GHG emissions owned by the portfolio. The company emissions ownership is calculated as (invested value / <b>total assets</b> ) * GHG emissions	2,93	2,84
Revenue owned emissions weighted temperature score (ROTS)	The respective weighting reflects how much the portfolio owns of the company's GHG emissions divided by all GHG emissions owned by the portfolio. The company emissions ownership is calculated as (invested value / <b>revenue</b> ) * GHG emissions	2,81	2,86





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# Next Step

# SBTi Finance Tool | Where do we start?

Company	Solution(s)
CDP	Provides cleaned input data collected via its annual disclosure system, centered on GHG emissions & target data. CDP can also provide completed temperature ratings for all disclosing companies.
Bloomberg	Has developed a temperature rating/alignment tool with the ability to call in a portfolio directly and link input data seamlessly for calculation of temperature scores at company and portfolio level.
ISS ESG	Provides data needed to run the open source tool. The SBTi temperature analysis can be used to complement ISS ESG's scenario alignment, fully automatic on portfolio level & integrated into the ISS ESG climate impact reports. Further tool integration into existing products is being explored.
MSCI	MSCI collects and provides data to institutional investors that could be used as input data for the SBTi's new methodology and tool. MSCI is testing the tool to understand similarities & differences between MSCI's Warming Potential metric and SBTi's new temperature scoring.
Ortec Finance, OS-Climate & Linux Fnd	Ortec provides temperature scoring analysis of portfolios & companies as a service for asset managers. OS-Climate Platform-building with Allianz, Amazon, Microsoft, Ortec Finance, and S&P to enhance the tool via open source development w input from SBTi, SASB, & Ceres.
Trucost part of S&P Global	Data from Trucost and S&P Global can be used by the SBTi-Finance tool. Deeper integration is being explored.
Urgentem	Urgentem will incorporate the python code (branched) as an API on one of its servers and will develop a module within its current platform (Element6) that will have company level temperature scores and portfolio and sector aggregations.
SBTi Finance	Google Colab <a href="#">Interactive analysis workflow example with method summary</a>



**Bloomberg**



**Trucost  
ESG Analysis**

**S&P Global**

**URGENTEM**



## SBTi Finance Tool | Where can we learn more?

Webinar	Date	Time	Agenda	Sign up here
Developer Technical Deep Dive	14 October 2020	9am CEST/ 3pm HKT  &  3pm CEST/ 9am EST	<ul style="list-style-type: none"><li>- Setup, integrate &amp; use the tool in your firm's infrastructure</li><li>- Create integrated workflow for analysts &amp; portfolio managers</li><li>- Python library</li><li>- Microservice (REST API)</li><li>- User interface</li></ul>	Asia / Europe: <a href="#">9-10am, Europe/Brussels</a>  Europe / Americas: <a href="#">9-10am, New York</a>

## SBTi Finance – Q&A

<https://sciencebasedtargets.org/finance-tool/>

<http://www.sbti-tool.org/>

<http://getting-started.sbti-tool.org/>

[finance@sciencebasedtargets.org](mailto:finance@sciencebasedtargets.org)



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# Appendix

# SBTi Finance Tool | Architecture

