SBTi Finance Tool
Tech Deep Dive
14th October 2020

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House keeping

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

• Introduction (5 min)
• SBTi Finance Framework (5 min)
• SBTi Finance Tool overview (10 min)
• A Technical Tour (20 min)
• Data connectors, Contribution & Terms of Use (5 min)
• Next steps (2 min)
• Q&A (13 min)
Science Based Target initiative (SBTi)

All Companies

1,009 Committed
~36 join per month
486 Approved

Financial Institutions

60 Committed

*as of 2020-10-13*
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).
SBTi Finance Framework | Framework Components

Criteria

Methods

SBTs for FIs

Tools

Guidance
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**
<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate</td>
<td>Sector Decarbonization Approach (SDA)</td>
<td>Emissions-based physical intensity targets are set for non-residential buildings’ intensity and total GHG emissions.</td>
</tr>
<tr>
<td>Mortgages</td>
<td>SDA</td>
<td>Emissions-based physical intensity targets are set for residential buildings’ intensity and total GHG emissions.</td>
</tr>
<tr>
<td>Electricity Generation Project Finance</td>
<td>SDA</td>
<td>Emissions-based physical intensity targets are set for electricity generation projects’ intensity and total GHG emissions.</td>
</tr>
<tr>
<td>Corporate Instruments (equity, bonds, loans)</td>
<td>SDA</td>
<td>Emissions-based physical intensity targets are set at sector level within the portfolio for sector where sectoral decarbonization approaches are available.</td>
</tr>
<tr>
<td>SBT Portfolio Coverage</td>
<td></td>
<td>Financial institutions engage a portion of their investees to have their own science-based targets such that they will reach 100% coverage by 2040.</td>
</tr>
<tr>
<td>Temperature Rating</td>
<td></td>
<td>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).</td>
</tr>
</tbody>
</table>
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.
## 8 Case Studies

<table>
<thead>
<tr>
<th>Institution</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amundi</td>
<td>Temperature Rating Method</td>
</tr>
<tr>
<td>Bank J. Safra Sarasin</td>
<td>SDA for Real Estate</td>
</tr>
<tr>
<td>Storebrand</td>
<td>SDA for Real Estate</td>
</tr>
<tr>
<td>Eurazeo</td>
<td>SBT Portfolio Coverage</td>
</tr>
<tr>
<td>La Banque Postale</td>
<td>SBT Portfolio Coverage &amp; SDA</td>
</tr>
<tr>
<td>Mizuho Financial Group</td>
<td>SDA for Electricity Generation Project Finance</td>
</tr>
<tr>
<td>De Volksbank</td>
<td>SDA for Mortgages</td>
</tr>
<tr>
<td>Wells Fargo &amp; Company</td>
<td>PCAF</td>
</tr>
</tbody>
</table>
Launching the pilot target validation phase for financial institutions

1. **COMMIT**

Starting from October 1st 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 1st 2020 to submit targets.

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/](https://sciencebasedtargets.org/financial-institutions/)

Contact **targets@sciencebasedtargets.org** to express your interest!

4. **COMMUNICATE**

5. **DISCLOSE**
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
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.sbtitool.org/
• GitHub Repository for Code - http://www.sbtitool.org/
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 | Analysis Example

Company Temp Score

<table>
<thead>
<tr>
<th>Scope</th>
<th>Short-term 2021-2024</th>
<th>Mid-term 2025-2035</th>
<th>Long-term 2035-2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+2</td>
<td>Temp score</td>
<td>Temp score</td>
<td>Temp score</td>
</tr>
<tr>
<td>3</td>
<td>Temp score</td>
<td>Temp score</td>
<td>Temp score</td>
</tr>
</tbody>
</table>

Portfolio Temp Score (50 company portfolio with randomized data)

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

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Scope</th>
<th>Temp score</th>
</tr>
</thead>
<tbody>
<tr>
<td>mid</td>
<td>S1S2</td>
<td>2.03</td>
</tr>
<tr>
<td>mid</td>
<td>S1S2S3</td>
<td>2.88</td>
</tr>
</tbody>
</table>

Portfolio Coverage

```python
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%
Which companies should I engage with?

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

Put Company Q & Company AM into our engagement scenario 4a: “Engage to encourage companies to set 2C targets”.
What is the impact on my portfolio TS?

Modelling 2 companies in a 50-company portfolio

```python
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
```

```python
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)
```
What is the impact on a sector level?

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

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 | Reporting

Reporting to SBTi
- Example notebook for reporting and submitting targets to SBTi (5_reporting.ipynb)
- Anonymized data-export – no need to disclose holdings
A Technical Tour
SBTi-Finance Tool – Three ways to use

Key philosophies:
• Open-source
• Bring the model to the data
• Data provider agnostic

Key Ingredients:
• Docker
• Python3
The sbti Python Package is a well documented packages for the SBTi methodology. Available at PyPi

- Integration in your own Python codebase
- Perform Analytics with Jupyter notebooks

Project links

- PyPi Homepage
- Download
- Source Code
- Documentation
- Bug Tracker
Intermezzo – Type hinting and Pydantic

As of Python 3.6 the language supports type hinting

- Editor support
- Type checks.

...on top of type hinting we deployed Pydantic

*Data validation and settings management using Python type hinting.*

- Fast and extensible, pydantic plays nicely with your linters/IDE/brain. Define how data should be in pure, canonical Python 3.6+; validate it with pydantic.

```python
from datetime import datetime
from pydantic import BaseModel

class User(BaseModel):
    id: int
    name: str = 'John Doe'
    signup_ts: datetime = None
```

User(id)
When to use what? – REST API

Temperature Microservice (REST API)
Exposes sbti Python Package in production quality API

- Supports Integration in workspace:
  - Platforms
  - Web applications
  - Data providers
  - Portfolio Mgt systems

Project links
- [Source Code](#)
- [Documentation / Swagger Docs](#)
- [Bug Tracker](#)
- [Docker Hub](#)
Intermezzo II – Type hinting, pydantic and FastAPI

...and FastAPI uses the same declarations to:

- Define requirements: from request path parameters, query parameters, headers, bodies, dependencies, etc.
- Convert data: from the request to the required type.
- Validate data: coming from each request:
  - Generating automatic errors returned to the client when the data is invalid.
- Document the API using OpenAPI:
  - which is then used by the automatic interactive documentation user interfaces.
When to use what? – UI

Simple UI skin on API functionality

- Eases Testing and Demos
- Support Excel uploads for both Portfolio and Target data
- Multi container deployment (frontend/backend)

Project links

- [Documentation](#)
- [Docker Hub](#)
Data Connectors
Contribution &
Terms of Use
Data Connectors | How to build your own
Data Connectors | How to build your own

```python
from abc import ABC, abstractmethod
from typing import List

from SBTI.interfaces import IDataProviderCompany, IDataProviderTarget

class DataProvider(ABC):
    
    General data provider super class.
    
    @abstractmethod
    def __init__(self, **kwargs):
        Create a new data provider instance.

        :param config: A dictionary containing the configuration parameters for this data provider.
        :return: None

    @abstractmethod
    def get_targets(self, company_ids: List[str]) -> List[IDataProviderTarget]:
        Get all relevant targets for a list of company IDs (ISIN). This method should return a list of IDataProviderTarget instances.

        :param company_ids: A list of company IDs (ISINs)
        :return: A list containing the targets

        raise NotImplementedError

    @abstractmethod
    def get_company_data(self, self, company_ids: List[str]) -> List[IDataProviderCompany]:
        
```
Contributing

CREATE A BRANCH
Create a branch in your project where you can safely experiment and make changes.

OPEN A PULL REQUEST
Use a pull request to get feedback on your changes from people down the hall or ten time zones away.

MERGE AND DEPLOY
Merge your changes into your master branch and deploy your code.
Terms of Use

MIT License

A short and simple permissive license with conditions only requiring preservation of copyright and license notices. Licensed works, modifications, and larger works may be distributed under different terms and without source code.

Permissions
- Commercial use
- Distribution
- Modification
- Private use

Conditions
- License and copyright notice

Limitations
- Liability
- Warranty
Next Step
## SBTi Finance Tool | Where do we start?

<table>
<thead>
<tr>
<th>Company</th>
<th>Solution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDP</td>
<td>Provides cleaned input data collected via its annual disclosure system, centered on GHG emissions &amp; target data. CDP can also provide completed temperature ratings for all disclosing companies.</td>
</tr>
<tr>
<td>Bloomberg</td>
<td>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.</td>
</tr>
<tr>
<td>ISS ESG</td>
<td>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 &amp; integrated into the ISS ESG climate impact reports. Further tool integration into existing products is being explored.</td>
</tr>
<tr>
<td>MSCI</td>
<td>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 &amp; differences between MSCI’s Warming Potential metric and SBTi’s new temperature scoring.</td>
</tr>
<tr>
<td>Ortec Finance, OS-Climate &amp; Linux Fnd</td>
<td>Ortec provides temperature scoring analysis of portfolios &amp; companies as a service for asset managers. OS-Climate Platform-building with Allianz, Amazon, Microsoft, Ortec Finance, and S&amp;P to enhance the tool via open source development w input from SBTi, SASB, &amp; Ceres.</td>
</tr>
<tr>
<td>Trucost part of S&amp;P Global</td>
<td>Data from Trucost and S&amp;P Global can be used by the SBTi-Finance tool. Deeper integration is being explored.</td>
</tr>
<tr>
<td>Urgentem</td>
<td>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.</td>
</tr>
<tr>
<td>SBTi Finance</td>
<td>Google Colab <a href="https://colab.research.google.com/github/360EnvironmentalScience/Finance-Tool/blob/master/notebooks/Interactive_analysis.py">Interactive analysis workflow example with method summary</a></td>
</tr>
</tbody>
</table>

[Image 602x260 to 701x284]
[Image 602x219 to 687x240]
[Image 602x171 to 687x199]
[Image 602x50 to 692x64]
[Image 601x295 to 669x324]
[Image 602x119 to 713x154]
[Image 602x77 to 657x115]
[Image 602x10 to 645x34]
SBTi Finance – Q&A

Website: https://sciencebasedtargets.org/finance-tool/
Code: http://www.sbtitool.org/
Documentation: http://getting-started.sbtitool.org/

finance@sciencebasedtargets.org
SBTi Finance Tool
- Additional slides
SBTi Finance Tool | Structure

**Input**
- Bloomberg, CDP, ISS ESG, MSCI, Urgentem, data lake...
- Company SBT & Publicly Announced emissions reduction targets
  - Ambition
  - Timeframe
  - Scope
  - Coverage
  - Absolute & Intensity targets

**Measure Alignment & Target Setting Tool**
- Open Source Methodology & Python Code
- Convert company targets → Temperature Score
- Aggregate to portfolio, sector, market, ...
- Measure alignment with Paris Agreement
- Set portfolio emissions reduction target
- Target companies for action
  - Engage / Divest / Portfolio shifting

**Output**
- Integrate tool with existing infrastructure
  - Bloomberg, CDP, ISS ESG, MSCI, Urgentem, Asset Managers...
- Users:
  - ESG teams
  - Portfolio Manager
  - Financial Analysts
  - Compliance & Risk
  - CIO
- Submit target to SBTi
- EU Paris Alignment Disclosure
SBTi Finance Tool | Analysis Process

**Step 1.** Convert targets to temperature scores

**Step 2.** Generate company level scores

**Step 3.** Portfolio weighting step

**Step 4.** Scenario Analysis

- Corporate Target Data
- Corporate Target Data

- Corporate GHG Emissions Data
- Portfolio financial data
- Temperature scores for all individual companies
- Portfolio temperature score

- Scenarios to achieve targets e.g. if all companies in portfolio set 2C targets
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

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 | What data do we need?

- Portfolio
- Financials + Emissions
- Emissions Reduction Targets
- +4,000 publicly disclosed targets
- +470 SBTi approved target
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”.

### Portfolio Aggregation Options

<table>
<thead>
<tr>
<th>Aggregation Method</th>
<th>Description</th>
<th>Scope 1+2 temperature rating</th>
<th>Scope 1+2+3 temperature rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted Average Temperature Score (WATS) – Portfolio weights</td>
<td>The respective weighting is <strong>the invested value</strong> in a company divided by the total value of the portfolio.</td>
<td>2.39</td>
<td>2.66</td>
</tr>
<tr>
<td>Total Emissions Weighted Temperature Score (TETS)</td>
<td>The respective weighting is <strong>the company’s GHG emissions</strong> divided by all investee companies’ GHG emissions.</td>
<td>2.60</td>
<td>2.98</td>
</tr>
<tr>
<td>Market Owned emissions weighted temperature score (MOTS)</td>
<td>The respective weighting reflects <strong>how much the portfolio owns of the company’s GHG emissions</strong> divided by all GHG emissions owned by the portfolio. The company emissions ownership is calculated as (invested value / market cap) * GHG emissions</td>
<td>2.73</td>
<td>2.84</td>
</tr>
<tr>
<td>Enterprise Owned emissions weighted temperature score (EOTS)</td>
<td>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 / enterprise value) * GHG emissions</td>
<td>2.71</td>
<td>2.85</td>
</tr>
<tr>
<td>Enterprise Value + Cash emissions weighted temperature score (ECOTS)</td>
<td>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 / enterprise value + cash) * GHG emissions</td>
<td>2.76</td>
<td>2.87</td>
</tr>
<tr>
<td>Total Assets emissions weighted temperature score (AOTS)</td>
<td>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 / total assets) * GHG emissions</td>
<td>2.93</td>
<td>2.84</td>
</tr>
<tr>
<td>Revenue owned emissions weighted temperature score (ROTS)</td>
<td>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 / revenue) * GHG emissions</td>
<td>2.81</td>
<td>2.86</td>
</tr>
</tbody>
</table>
SBTi Finance Tool | Architecture
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.

<table>
<thead>
<tr>
<th>Example targets</th>
<th>Translated temperature scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>30% absolute reduction by 2025</td>
<td>1.8°C</td>
</tr>
<tr>
<td>4% year-on-year reduction by 2030</td>
<td>1.9°C</td>
</tr>
<tr>
<td>50% reduction per unit of revenue by 2030</td>
<td>2.1°C</td>
</tr>
<tr>
<td>25% reduction per MWh by 2025</td>
<td>3.1°C</td>
</tr>
</tbody>
</table>
Methodology I Three Step Process

Temperature scoring process

1. The protocol for interpreting corporate targets is applied to the 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 | 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

#sciencebasedtargets
Methodology I Step 1 Target Protocol

Final scenario set and time horizon chosen by combination of:

• goodness of fit (adj $R^2$)
• alignment to SBTi’s precautionary view of overshoot/CDR (max 10 Gt/yr)

Results:

• total 133 scenarios from SR1.5 ensemble
• Adj. R2 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 | 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 | Step 2 Company Protocol**

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

<table>
<thead>
<tr>
<th></th>
<th>Short-term 2021-2024</th>
<th>Mid-term 2025-2035</th>
<th>Long-term 2035-2050</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scope 1+2</strong></td>
<td>No target/ default score: 3.2°C</td>
<td>Yes 1.8°C</td>
<td>Yes 1.9°C</td>
</tr>
<tr>
<td>GHG: 450,000t</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Scope 3</strong></td>
<td>No target/ default score: 3.2°C</td>
<td>No target/ default score: 3.2°C</td>
<td>No target/ default score: 3.2°C</td>
</tr>
<tr>
<td>GHG: 2,100,000t</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Scope 1+2+3</strong></td>
<td>No target/ default score: 3.2°C</td>
<td>GHG weighting applied to produce a composite score: (450,000 * 1.8°C) + (2,100,000 * 3.2°C) / 450,000 + 2,100,000 = 2.95°C</td>
<td>GHG weighting applied to produce a composite score: (450,000 * 1.9°C) + (2,100,000 * 3.2°C) / 450,000 + 2,100,000 = 2.97°C</td>
</tr>
<tr>
<td>GHG: 2,550,000t</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Methodology | 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:

<table>
<thead>
<tr>
<th>Option 1</th>
<th>Weighted average temperature score (WATS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 2</td>
<td>Total emissions weighted temperature score (TETS)</td>
</tr>
<tr>
<td>Option 3</td>
<td>Market Owned emissions weighted temperature score (MOTS)</td>
</tr>
<tr>
<td>Option 4</td>
<td>Enterprise Owned emissions weighted temperature score (EOTS)</td>
</tr>
<tr>
<td>Enterprise Value + Cash Owned emissions weighted temperature score (ECOTS)</td>
<td></td>
</tr>
<tr>
<td>Total Assets emissions weighted temperature score (AOTS)</td>
<td></td>
</tr>
</tbody>
</table>