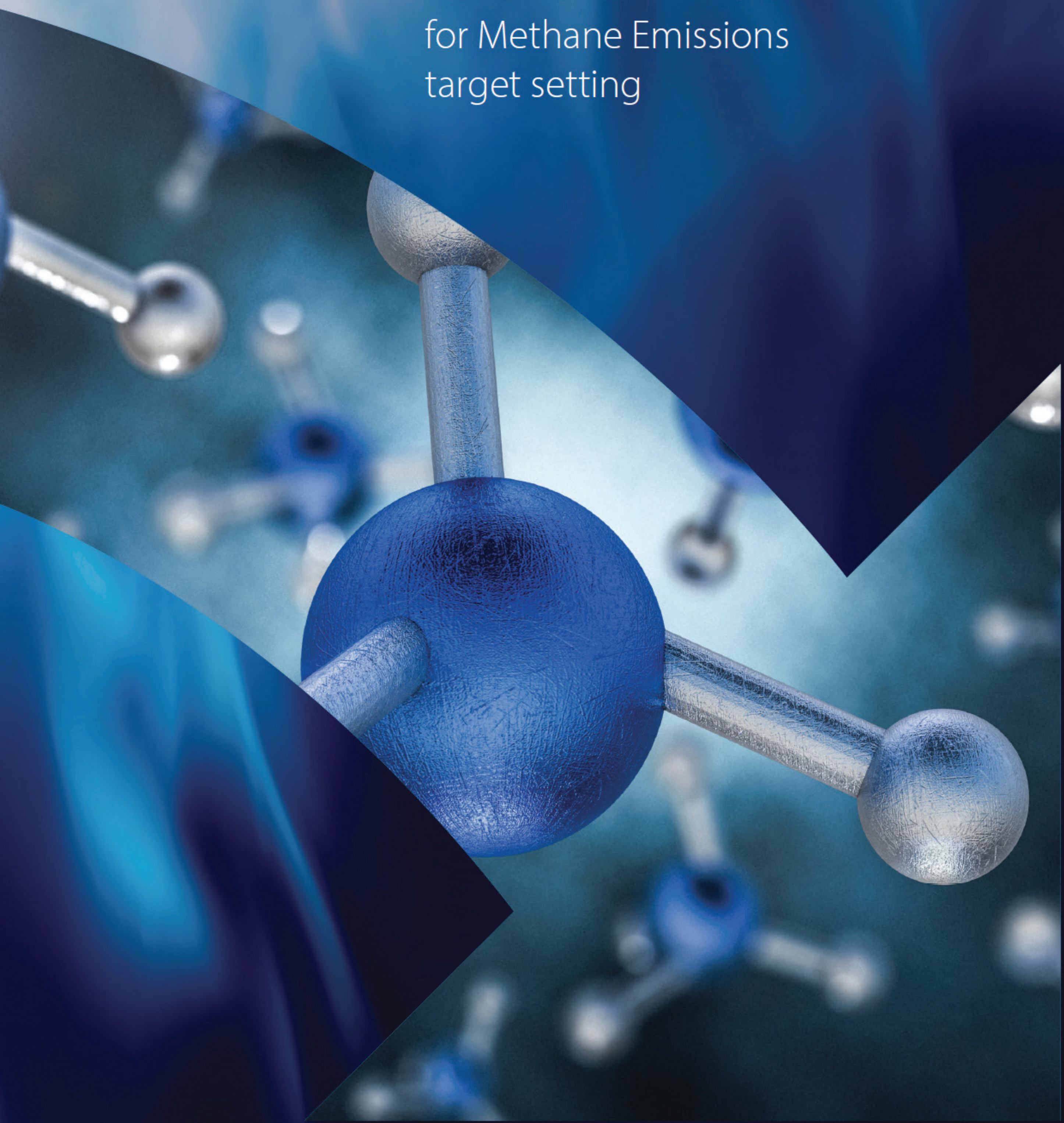
Guidelines

for Methane Emissions target setting



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IOGP International Association of Oil & Gas Producers

marcogaz

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1 INTRODUCTION

In an international context where decarbonisation of the energy systems is crucial for accelerating the energy transition and contribute to the European goal of achieving the Paris targets, methane (CH_4) emissions are considered to have an important impact on the gas sector.

Given the impact of methane emissions on climate change, the management of these emissions together with the **establishment of emissions reduction targets** is vital for the gas sector to play a key role in moving toward decarbonisation.

Although many European gas companies have already set GHG emissions reduction targets, there is a need to better understand the nature of these targets as well as to define homogeneous guidelines for emissions target setting.

This document analyses the current situation in Europe based on the answers of a questionnaire circulated among GIE, IOGP and MARCOGAZ' members. It also gives some insights on the key elements to be considered when setting a target as well as the guidelines to be followed by companies across the value chain, willing to implement emissions reduction targets[1].

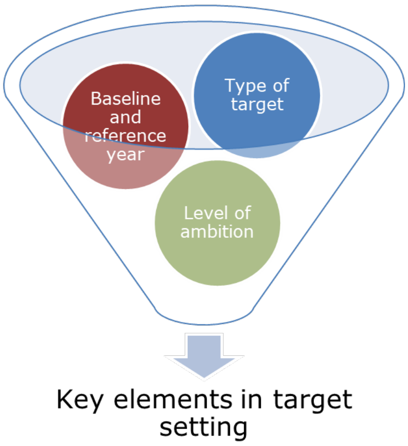
This document should be used as a technical guideline for companies to support the development of emissions targets.

[1] These guidelines could be used as a reference for those companies operating in the O&G upstream sector.

2 KEY ELEMENTS IN TARGET SETTING

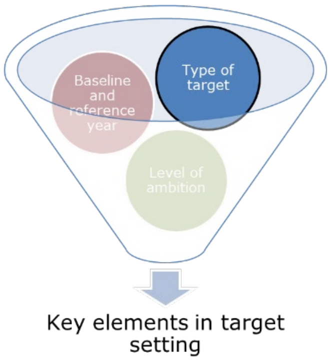
Companies willing to set a methane emissions target should take into account several factors to ensure that the target is aligned with their strategies and, at the same time, is realistic and feasible. Among the elements to be considered when setting a target, the following three elements are the most relevant:

Figure 1: Key elements in target setting



Source: Elaborated by the authors

2.1 Type of targets:

	When defining targets, companies should decide on the type of target: **absolute or intensity-based** and **GHG** emissions **or methane** specific targets: ▪ <u>**Absolute versus intensity targets**</u>: o *An absolute target* describes a reduction in actual emissions in a future year when compared to a base year. o *An intensity target* describes a reduction in emissions that have been normalized to a business metric (such as emissions per energy produced/sold; per commercialised gas, marketed gas; per kilometre energy is transported, etc.) when compared to the same normalized business metric emissions in a base year. It is important to define the relationship of scale between the absolute quantities and the **normalization factors**. In general, when using intensity targets, organizations should define the target in ways that align with business decision making and in ways that allow clear communication of performance versus the target to stakeholders. Intensity targets also allow for comparisons between companies of varying sizes, if the emissions calculation methods and normalization factors are consistent. In addition, intensity targets allow to absorb perimeter variation without impact the target (an absolute reduction could be achieved by selling sites & disengage from operations).

	It also allows setting benchmarking thresholds so as any company could compare to it. ▪ **GHG emissions versus Specific Methane targets:** ○ *GHG emissions targets,* in general, include all GHG emissions derived from an organization's activity covered by the Kyoto Protocol: CO_2, **CH_4**, N_2O, HFCs, PFCs, SF_6, and NF3. GHG emissions are normalized to $CO_{2equivalent}$ (CO_{2eq}) and usually expressed in kg or tonnes. GHG targets can relate to Scope 1, Scope 2 and/or Scope 3 emissions in full or in part. GHG emissions are normalized. ○ *Methane specific targets* can be set individually apart from a GHG target and contribute to achieve GHG emissions targets. Methane emissions are expressed either in t CH_4 or normalized in t CO_{2eq}. Investors, NGOs, regulators and international institutions are increasingly asking for methane specific targets in the O&G sector, so it is **considered a good practice** to set methane specific targets. In this context, it is highly advised that companies set specific methane targets together with GHG emissions targets.

Examples[2] of Absolute vs Intensity targets:

Absolute targets:

Enagás[3]:

Enagás has set a GHG emissions target of reducing absolute GHG emissions an average of 5 % in the period 2019-2021 compared to 2018.

GRT-gaz[4]:

67 % absolute methane emissions reduction by 2020 compared to 2016.

Intensity targets:

Naturgy[5]:

Reduce specific emissions by 33 % by 2025 (according to the SBTI tool v.8) compared to the 2012 base year.

Oil & Gas Climate Initiative (OGCI)[6,7]:

An initiative where several major oil & gas companies commit to reduce the collective average methane intensity of their aggregated upstream oil & gas operations to below 0.25 % by 2025 (from a baseline of 0.32 % in 2017), with an ambition to achieve a level of 0.2 %.

[2] GIE-Marcogaz report "Potential ways the gas industry can contribute to the reduction of methane emissions", June 2019.
[3] Enagás Consolidated Management Report 2019.
[4] Activity and sustainable development report 2016.
[5] Carbon Footprint Report 2017.
[6] Oil and Gas Climate Initiative sets first collective methane target for member companies
[7] A report from the Oil and Gas Climate Initiative, September 2018.

Examples of GHG vs Specific Methane targets:

GHG targets:

Snam[8]:

In 2019 Snam sets a voluntary target to reduce GHG emissions of 40 % by 2030 compared to 2016 levels (considered as base year).

Specific methane targets:

Enagás[9]:

In 2019, Enagás commited to reduce methane emissions from its activity by 45% in 2025 and 60% in 2030 with respect to 2014 figures, according to the UNEP Global Methane Alliance initiative.

GRT-gaz[10]:

Methane emissions to be divided by 3 in 2020 based on 2016 figures.

Gasunie[11]:

The methane emission in 2030 is a maximum of 50 kiloton CO_{2eq}.

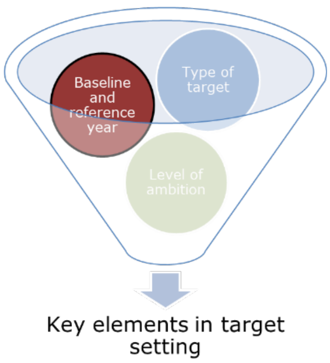
Snam[12]:

In 2019 Snam sets a voluntary target to reduce methane emissions of 40 % by 2025 compared to 2016 levels (considered as base year).

Fluxys Belgium[13]:

Fluxys Belgium committed to reduce its methane-emission 50% by 2025, and is investigating additional projects to further reduce his footprint after 2025. (ref-year 2017).

2.2 Baseline year and reference year:



Companies should choose a **target base year** as well as define the **target completion date** (reference year/target year).

- **Baseline year**

The **baseline year** is the year against which companies compare their reduction target. Companies can have:

- *Fixed target base year*: defined as a percentage reduction in emissions below a fixed target base year (e.g., reduce methane emissions 15% below 2015 levels by 2030).
- *Year-on-year rolling target*: base year will be the previous reporting year. Companies may consider this approach if obtaining and maintaining reliable and

[8] Snam: Increasing results, more investments in the energy transition in the 2019-2023 Plan
[9] 2019 Results Outlook 2020-2026, February 2020.
[10] Activity and sustainable development report 2016.
[11] Gasunie Environmental results
[12] Snam: Increasing results, more investments in the energy transition in the 2019-2023 Plan
[13] Fluxys Annual Financial Report 2018

	verifiable data for a fixed target base year is likely to be challenging (for example, due to frequent acquisitions). ○ Target based on average emissions over a period of time (e.g. 5-year average). Whenever possible, it is recommended to choose a recent baseline year with verified data. ▪ **Reference year/target year** **Reference year/target year** defines the target completion date and depends on the length of the commitment period. A company can have: ○ *A single year commitment period.* ○ *Multi-year commitment period.* The target completion date determines whether the target is set for the short, medium or long term. **Best Practices**[14] for GHG emissions targets include the setting of at least two targets to cover both the medium (5-15 years) and long terms (>15 years). For methane targets, international initiatives such as the UNEP Global Methane Alliance refers to 2025 and 2030. Generally, long-term targets depend on uncertain future developments. Adding intermediate targets and/or milestones increases the credibility of these long-term commitments by giving stakeholders and the public more clarity on how this vision is going to impact the short-term. Above all, intermediate targets / milestones are necessary to drive the action plans towards the medium and long term goals. It is important to highlight that short term reduction targets are important drivers of near-term action and hence, should not be underestimated. In the long-term, low-carbon technologies such as Carbon Capture, Utilization and Storage (CCUS) can further contribute to the reduction of CO_2 emissions.

Examples of baseline year: average emissions over a period of time:

Energinet[15]:

The Energinet group has set a target to reduce methane emissions by 10 % in 2020 compared to the 2015-2017 average.

Gasunie[16]:

Up to 2030 annually an average of 4% reduction in GHG emissions that are a direct consequence of own business activities. The reduction is always compared with the emissions

[14] Information based in the latest publication of the Science Based Targets Initiative (SBTi) "SBTi Criteria and recommendations"; April 2019.
[15] Energinet System Plan 2018
[16] Gasunie Environmental results

in the three previous years and will be achieved to a large extent by reducing our methane emissions.

Examples of reference year: Multi-year commitment period:

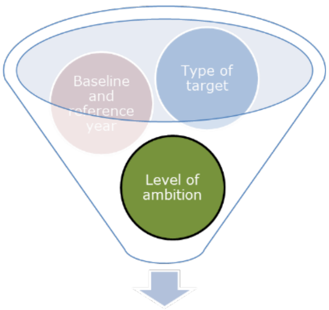
Enagás[17]**:**

Enagás has set an emissions reduction target of reducing GHG emissions an average of 5% in the period 2019-2021 compared to 2018.

Naturgy[18]:

Reduce the average absolute emissions, in Scope 1 and 2, by 17.8 % for 2013-2030 compared to the 2012 base year.

2.3 Level of ambition:



Key elements in target setting

Main factors to determine the **level of ambition** include:

- *Methane reduction potential*: companies should analyze what is their CH_4 reduction potential based, among others, on:
  - The development of emission reduction strategies for vents, incomplete combustion or fugitive emissions by implementing major reduction opportunities and Best Available Techniques (BATs).
  - The improvement of operational activities.
- *Drivers affecting methane emissions*, this is, the relationship between methane emissions and business metrics, investment and growth strategy.
- *International/national initiatives* with a specific level of ambition (e.g. Global Methane Alliance ambition level: reduce by 45% by 2025 and 60%-70% by 2030 methane emissions compared to 2015 or to a "near zero" methane intensity target).
- *Alignment with other companies*, this is, benchmarking of methane targets with similar organizations.
- *Science based targets* scenarios to ensure that targets are in line with the IPPCC scenario toward Paris agreement goals[19].
- Near zero ambition as a long term strategy or if the current level is already very low.

[17] Enagás Consolidated Management Report 2019
[18] Carbon Footprint Report 2017.
[19] Please note that at the time of publication of this document, Science-Based Target Initiative (SBTi) has not released the specific methodology for O&G sector. For more details, please visit SBTi website.

Examples of level of ambition set for methane specific targets:

ExxonMobil[20]:

15 % methane emissions reduction from global operations by 2020 versus a 2016 baseline.

BP[21]:

BP will install methane measurement at all its existing major oil and gas processing sites by 2023, publish the data, and then drive a 50 % reduction in methane intensity of its operations.

Oil and Gas Climate Initiative (OGCI)

OGCI has set a target to reduce by 2025 the collective average methane intensity of its aggregated upstream gas and oil operations by one fifth to below 0.25%, with the ambition to achieve 0.20%, corresponding to a reduction by one third.[22]

In addition to the three key elements described above, there are other factors that should be also considered when setting emission reduction targets such as:

- **Boundaries**, this is, part of the value chain (up, mid, downstream) and geographies included within the scope of the target (one target for all countries where the company operates or different targets for the different countries).
- **Consolidation method**, this is, whether or not to include in the target scope not only own operations by also joint venture participation.

20 ExxonMobil Announces Greenhouse Gas Reduction Measures
21 BP ambition.
22 OCGI Methane Target

3 CURRENT SITUATION IN EUROPE

As part of the Action Plan of GIE-MARCOGAZ, a questionnaire on methane emission was circulated among GIE, IOGP and MARCOGAZ members. The questionnaire aimed at evaluating the establishment of methane emissions reduction targets in the gas sector.

Answers from 40 companies operating in 27 countries were received, covering all parts of the gas value chain.

The questionnaire gathered information about:

- The **methane emissions reduction already achieved** by the gas sector taking into account the previous efforts carried out by the industry/companies.
- **Emission reduction targets** set by the companies. This section covered information about whether companies have an emission reduction target and, if so, the nature of the target:
  a) GHG absolute
  b) GHG intensity
  c) Methane absolute
  d) Methane intensity

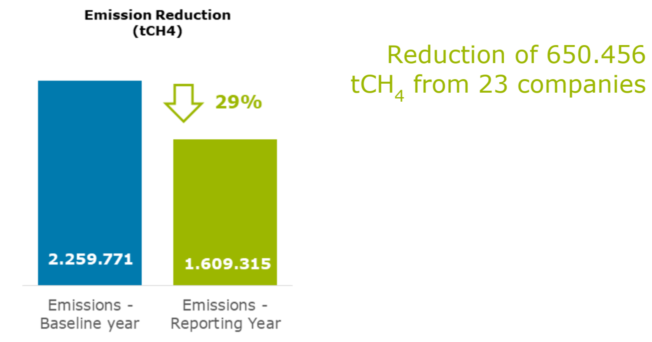
  Companies with targets also disclosed information on the baseline year, target year and level of ambition.

Conclusions for each section are included below.

3.1 Methane reduction achieved to date

57% of the companies have already achieved methane emissions reduction. In total, a reduction[23] of 650,456 tCH_4 has been reported by 23 European companies which represent a decrease by 29% of the CH_4 emissions in the reporting[24] year compared to the base year[25].

Figure 2: Methane Reduction already achieved by European companies



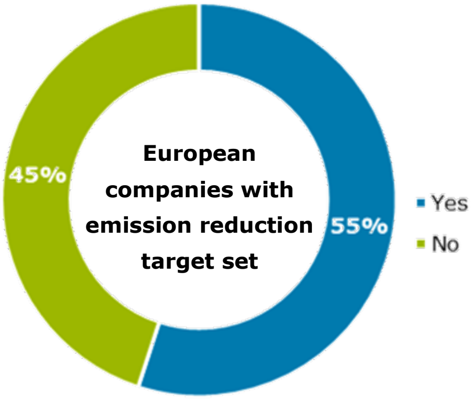
Source: Elaborated by the authors based on responses received

[23] Please not that methodologies used by reporting companies to disclose methane emission reduction may differ as there is not a unified EU methodology.
[24] Reporting years have been chosen by companies and varies between 2015 – 2018.
[25] Base years have been chosen by the companies and varies between 1990 – 2017 (there is only one company using 1990 as a base year). Emissions in baseline year represents 88% of European Methane emissions considered by Methane Tracker (2,582 $ktCH_4$).

3.2 Methane target setting

55% of the companies have already set **emission reduction targets** (GHG or methane) and 33% of the companies with no targets are willing to set their own emission reduction targets. 32% of companies have more than 1 target set.

Figure 3: European companies with emission reduction target set

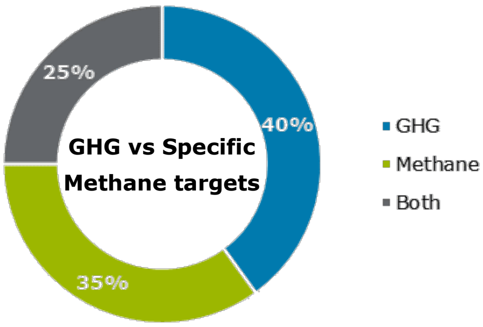


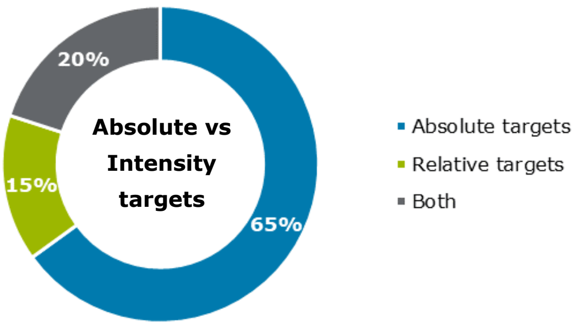
Source: Elaborated by the authors based on responses received

Regarding the **type of target**, 40% of the companies have a GHG target, 35% have defined Specific Methane targets and 25% have reported having set both. In addition, most of the companies (65%) have absolute targets whereas intensity targets represent 15%.

Figure 4: GHG vs Specific Methane targets

Figure 5: Absolute vs Intensity Targets



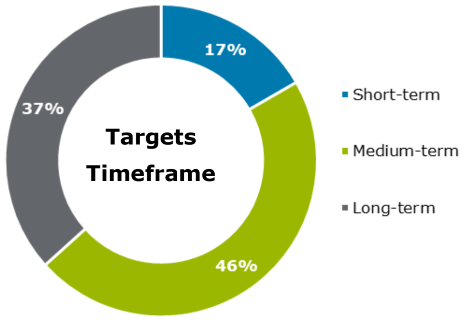


Source: Elaborated by the authors based on responses received

When analysing target's **timeframe**[26], results show that most of the targets (46%) set are for the medium term and the minority for the short term (17%).

[26] Timeframe: Short-term: 0 ≤ 3 years; Medium-term: > 3 ≤ 10 years; Long-term: > 10 years

Figure 6: Targets Timeframe



Source: Elaborated by the authors based on responses received

2018 and 2030 are the "most popular" base year and reference year, respectively, among targets reported by companies. Only one company has established a target beyond 2030.

3.3 Current level of ambition

Results from the questionnaire about the level of ambition between GHG targets and methane specific targets are presented below:

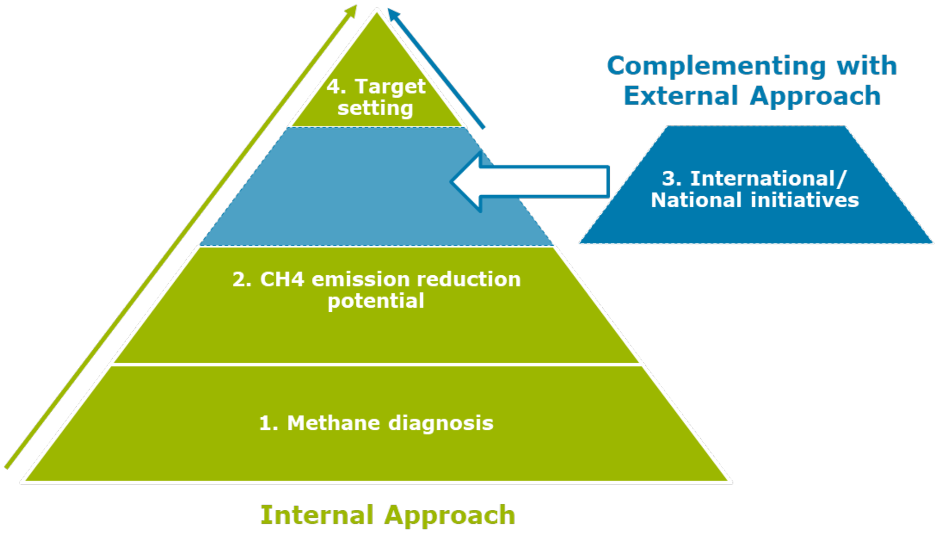
- **GHG targets:** Most of the GHG absolute targets have been set for 2020-2030 with a level of ambition between **-5% and -60%** (compared to baseline years between 2012-2018).
- **Methane Specific targets:** Most of the methane absolute targets have been set for 2020-2025 with a level of ambition between **-7% and -66%** (compared to baseline years between 2014-2018). Only two companies have established methane reduction targets for 2030 (reduction between 60% - 80% compared to 2014 and 2013).

4 STEPS IN SETTING METHANE TARGETS

This chapter describes a methodology to be followed when setting methane emission targets. It is not intended to prescribe what a company's target should be but the focus on the steps involved.

The two most common methodologies used for methane target setting are considering an **Internal Approach** and adding an **External Approach**. When setting CH_4 emission reduction targets, companies can follow the Internal Approach only or complement it by considering the External Approach:

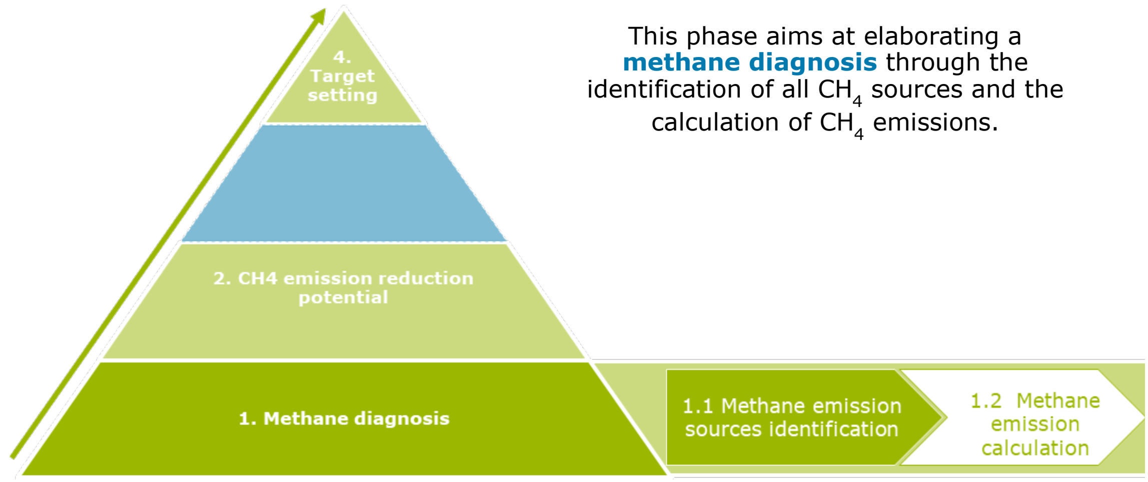
Figure 7: Steps in setting methane targets



Source: Elaborated by the authors

Internal Approach only takes into consideration inside company analysis whereas External Approach also considers external factors that complement and add value to the Internal Approach.

1. Methane emission sources identification



This phase aims at elaborating a **methane diagnosis** through the identification of all CH_4 sources and the calculation of CH_4 emissions.

1. 1 Methane emission sources identification:

Objective:

Identification of all methane emissions sources.

Tasks

a) Setting organization boundaries

Companies should select an approach for consolidating methane emissions and select those businesses and operations for the purpose of accounting and reporting CH_4 emissions (equity share or operational control approach).

b) Setting operational boundaries[27]

After determining the organizational boundaries, companies should identify CH_4 emissions associated with their operations. To this end, operational activities[28] as well as equipment[29] and components[30] are analyzed and classified as follows:

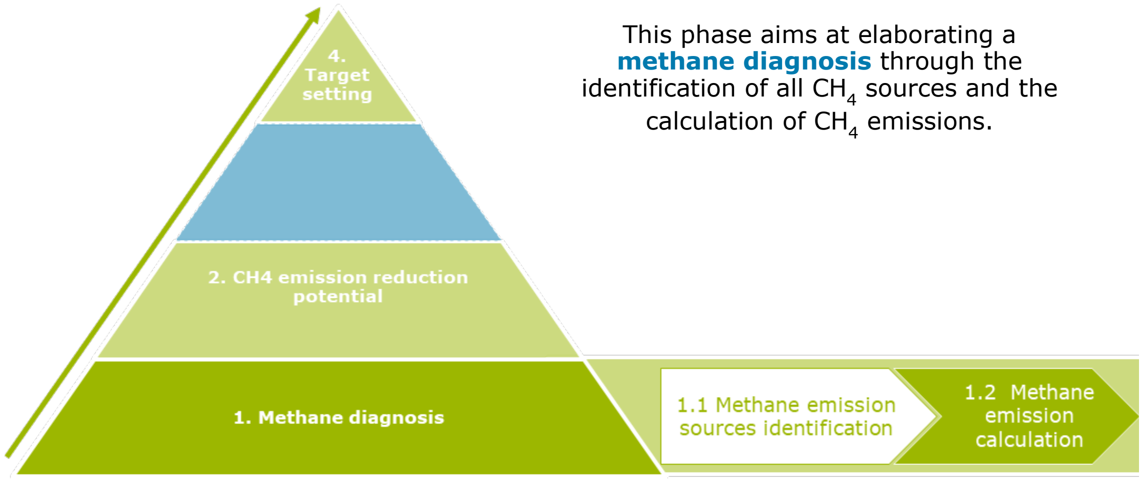
- Incomplete combustion from burning of fuels as well as flaring.
- Fugitive emissions from leaking equipment and components.
- Vents from operating activities, maintenance/repairs works, emergency situations, etc.

Output:

Inventory of all CH_4 emission sources linked to the organization's activities.

[27] For more details on assessing methane emissions, please refer to the technical document "Assessment of methane emissions for gas" – WG_ME-485. Marcogaz 2019.
Transmission and Distribution system operators
[28] *Operational activities may include loading/unloading vessels; start/stop of compressors; etc.*
[29] *Equipment may include, among others, pneumatic valves, compressors, pneumatic actuators, store tanks, gas pipeline; glycol dehydrators; etc.*
[30] *Components may include, among others, valves; seals; etc.*

1. Methane emission sources identification



This phase aims at elaborating a **methane diagnosis** through the identification of all CH_4 sources and the calculation of CH_4 emissions.

1. 2 Methane emission quantification:

Objective:

Quantification of total CH_4 emissions.

Tasks

The general idea on how to quantify total methane emissions is given by the following equation:

$$CH_4 \text{ emissions} = \Sigma(AF \times EF)$$

a) Collect Activity Factor (AF)

After identifying CH_4 emissions sources, companies should determine an activity factor for each source. An activity factor is a numerical value representing specific characteristics for a piece or similar group of emitting equipment. Activity factors may be used to represent e.g. length of pipelines, number of valves (per type), number of pneumatic devices (per type), or the frequency of emitting events such as number of operating vents, multiplied, if relevant, by the duration of the emission. Typically, activity factors are available from an operator's asset management databases, which include master data and incident registrations.

b) Choose Emission Factors (EF)

An emission factor is meant to represent typical methane emissions of a component or part of the system (e.g. valve, pipeline section).

Emission factors can be determined directly by measurement, estimated or calculated[31]:

Measurements

[31] *When possible, direct measurements should be used over other methodologies. However, depending on the availability of specific methods, to a given element of the system, a combination of all 3 methods (measurement, estimation and calculation) should be available tool.*

Emission measurements can be made using different kinds of methods such as optical gas imaging, flame ionisation detection, etc[32]. Measured data can be used directly for quantification or for estimation of EF's for different equipment types, groups of assets or entire assets. For instance, in case of fugitive emissions, LDAR campaigns[33] can provide additional insight in the emission rates of detected leak. Information collected from LDAR campaigns can inform estimates of fugitive emissions from assets using established methods.

Where continuous, direct measurement is possible, the emissions data generated can be used as the basis for calculating the emissions rate for a piece of equipment or asset annually, or during the period over which a leak is active. Otherwise, the results of representative direct measurements can be used to establish relevant emission factors.

Estimations

An EF established through estimation represents a typical methane emission from a component or an emission event. Such an EF can be developed based upon information from academic publications, field measurement campaigns on a device population sample, O&G industry R&D research, or equipment supplier data, so that the EF are at the closest of the company equipment reality. The relevant EF is then applied to a population of emitting sources.

Calculations

The EF used is directly calculated from field data or/and design data. For example, in the case of blowdown vents, the amount of methane emitted can be accurately derived from the pipe section volume (length and diameter),the pressure condition in that particular pipe section and the gas composition (i.e. % of CH_4, % NMVOCs, etc.) An AF in this case may be the number of vents at Operating Pressure (OP) during the events or if no information about pressure is available by default the Maximum Operating Pressure (MOP) can be used.

c) Choose Global Warming Potentials

Global Warming Potential (GWP) will also have to be chosen so CH_4 emissions rates can be converted to CO_2 equivalent. GWP 100 is the most well-known metric and is used widely including for national and international emission reporting, such as the United Nations Framework Convention on Climate Change (UNFCCC)[34]. Whilst it is accepted that there is no single correct metric, the consistent use of GWP100 at least allows consistent comparisons to previous studies and reports.

It is important to highlight that when quantifying methane emissions, companies should also quantify the level of uncertainty trying to reduce and minimize it.

Output:

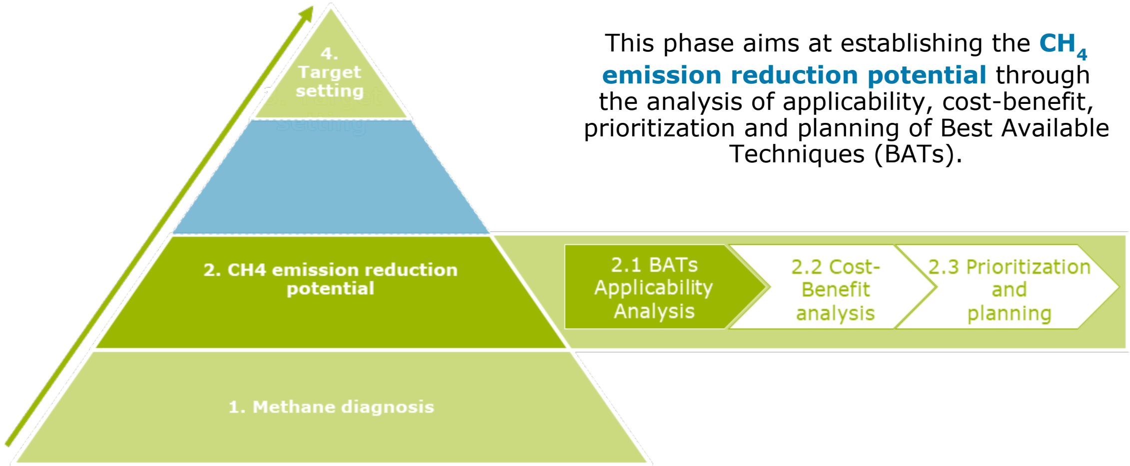
tCH_4 emissions for each category of emission source identified.

[32] For more details on methods for CH_4 detection and/or quantification assessing methane emissions, please refer to the technical document "*Assessment of methane emissions for gas*" – WG_ME-485. MARCOGAZ 2019.

[33] *LDAR Campaigns should be carried out as per official methodologies being "Method 21 - Determination of Volatile Organic Compound Leaks" (US EPA) and "UNE-EN 15446 - Determination of Volatile Organic Compound Leaks" the most common ones.*

[34] For more information, please see the IPCC website (www.ipcc.ch)

2. CH_4 emission reduction potential



This phase aims at establishing the **CH_4 emission reduction potential** through the analysis of applicability, cost-benefit, prioritization and planning of Best Available Techniques (BATs).

2.1 BATs Applicability Analysis:

Objective:

Analyze whether the BATs are applicable to the organization's business considering the facilities owned and operated by the organization. This task only seeks to understand whether BATs apply to the facilities; a further analysis is then carried out in task *2.2 Cost-Benefit Analysis* to assess if BATs can be technically and economically implemented.

Tasks

a) Identification of BATs

The company should identify what BATs for methane emissions reduction can be applied in their business operations. To this end, a benchmark analysis should be carried out considering BATs implemented by gas companies as well as official publications from international/national organisms or initiatives (e.g. GIE/MARCOGAZ[35], the Methane Guiding Principles[36], OGMP technical guidance documents[37], etc.).

b) Applicability Analysis

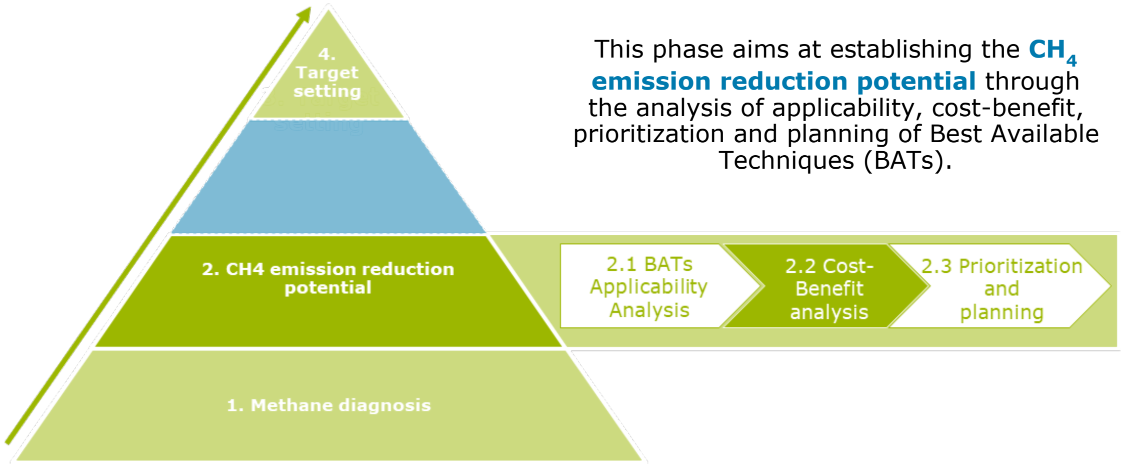
Once BATs have been identified, companies should analyze whether they are applicable to their segment of the gas chain, facilities and/or operations. To this end, companies will analyze if BATs can be implemented in the facilities (e.g. improvements in pneumatic valve only if the organization use this kind of valves).

Output:

List of BATs applicable to an organization facilities and operations.

[35] "Potential ways the gas industry can contribute to the reduction of methane emissions" report developed by GIE and MARCOGAZ with contributions from the industry.
[36] Best Practices Guides published by the Methane Guiding Principles available here.
[37] OGMP technical guidance documents available here.

2. CH_4 emission reduction potential



This phase aims at establishing the **CH_4 emission reduction potential** through the analysis of applicability, cost-benefit, prioritization and planning of Best Available Techniques (BATs).

2.2 Cost-Benefit analysis:

Objective:

Define which of the CH_4 emission reduction BATs are eligible to be implemented.

Tasks

a) Technical and economic analysis

After determining which BATs are applicable, companies should conduct an analysis to understand whether BATs can be implemented or not. This analysis would include:

1. Technical analysis to ensure that BATs can be implemented in the facilities. This analysis will involve engineering evaluation.
2. Economic analysis including cost evaluation and budget allocation needed for BAT implementation.

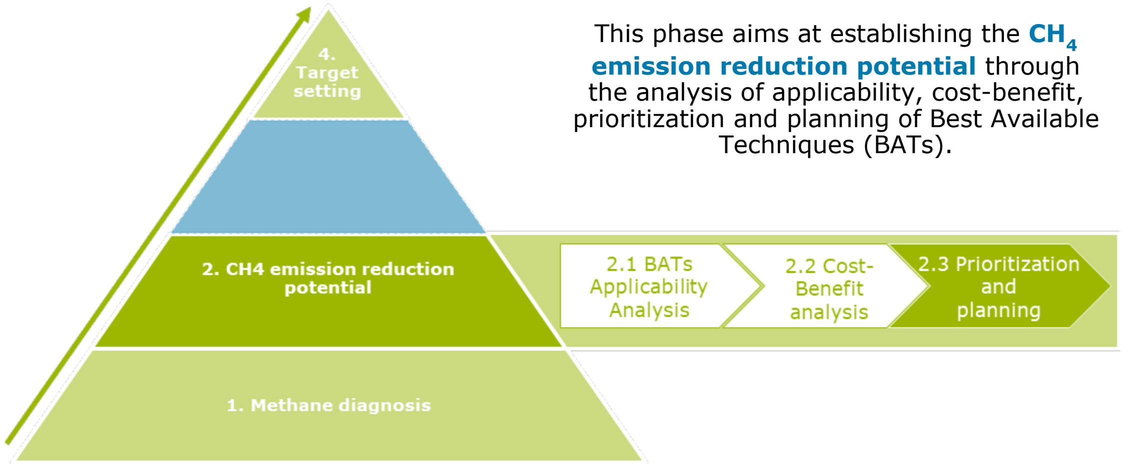
b) Calculation of CH_4 emissions reduction for each BAT

Methane emissions reduction for BATs, which are technically and economically feasible and efficient, will be calculated. This will allow to determine the methane emission reduction potential for each emission sources identified.

Output:

List of BATs to be implemented and CH_4 emission reduction potential together with associated implementing costs.

2. CH_4 emission reduction potential



2.3 Prioritization and planning:

Objective:

Establish the CH_4 emissions reduction pathway.

Tasks

<u>a) Prioritization of the BATs to be implemented</u>

Based on the Cost-Benefit Analysis, companies will give priority to those BATs with highest reductions at the lowest cost combined with their level of ambition. Prioritization will allow companies to be more cost efficient as well as to maximize the methane emissions reduction.

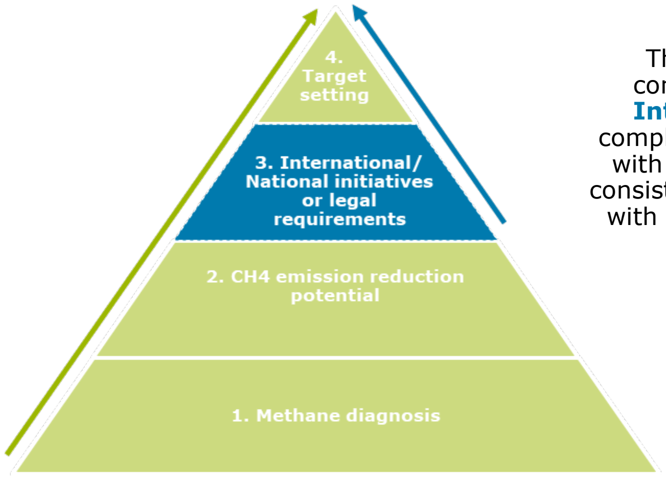
<u>b) BATs implementation scheduling</u>

Once the Cost-Benefit Analysis is conducted, companies should determine a methane emission reduction pathway considering the time when BATs are expected to be implemented. This pathway will serve as a planning for BATs implementation.

Output:

Methane emission reduction pathway.

3. Complementing with External Analysis



This phase would only apply to companies which have follow the **Internal Approach** and want to complement the target setting process with an External Approach to ensure consistency and methodology alignment with international/national initiatives.

3.1 Identification of international/National initiatives:

Objective:

Include in the target setting approach the analysis of external initiatives related to CH_4 emission reduction to ensure that target is aligned with international/national standards.

Tasks

a) Methane reduction target benchmark

Companies should conduct a benchmark to identify what are the current and upcoming trends in CH_4 emissions reduction. Benchmark should include:

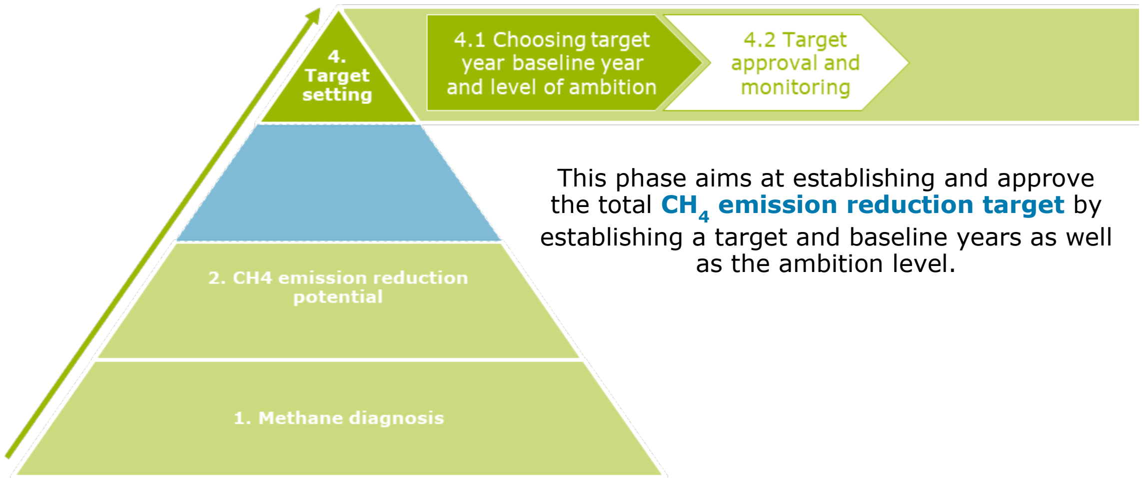
1. Type of target including intensity vs absolute as well as GHG vs methane targets.
2. Base year and target year to determine the baseline and well as the time horizon.
3. Level of ambition to consequently plan the implementation of BATs.

This analysis should include public and private sector along the whole gas value chain. In addition, the company should analyze its GHG emission reduction strategy to align the CH_4 reduction pathway. This analysis will allow to adjust the methane reduction pathway as well as the global methane target. To be in line with external initiatives, additional BATs might have to be considered to reach the level of ambition set by legislation or other initiatives.

Output:

Alignment of methane target with external initiatives for CH_4 emission reduction.

4. Target setting



This phase aims at establishing and approve the total **CH_4 emission reduction target** by establishing a target and baseline years as well as the ambition level.

4.1 Definition of target and base years:

Objective:

Establishment of a target year, baseline year and level of ambition to allow companies determining their total CH_4 emission reduction.

Tasks

a) Choosing the target year

Companies should define the time horizon (referred as target year) for implementing BATs. Time horizon may be determined considering, among others, the following:

- Methane emission reduction pathway defined in task *2.3 Prioritization and planning*.
- Alignment with other GHG commitments / targets already set by the organization.

Target year is the year where target is to be achieved.

b) Choosing the baseline year

Organization should choose and report a baseline year. Baseline year will be used as a basis for tracking progress toward the target. Base year will be one with verifiable emissions data and it could be a single year or an average of annual emissions over several consecutive years. It is recommended to choose a recent baseline year to ensure certain ambition level.

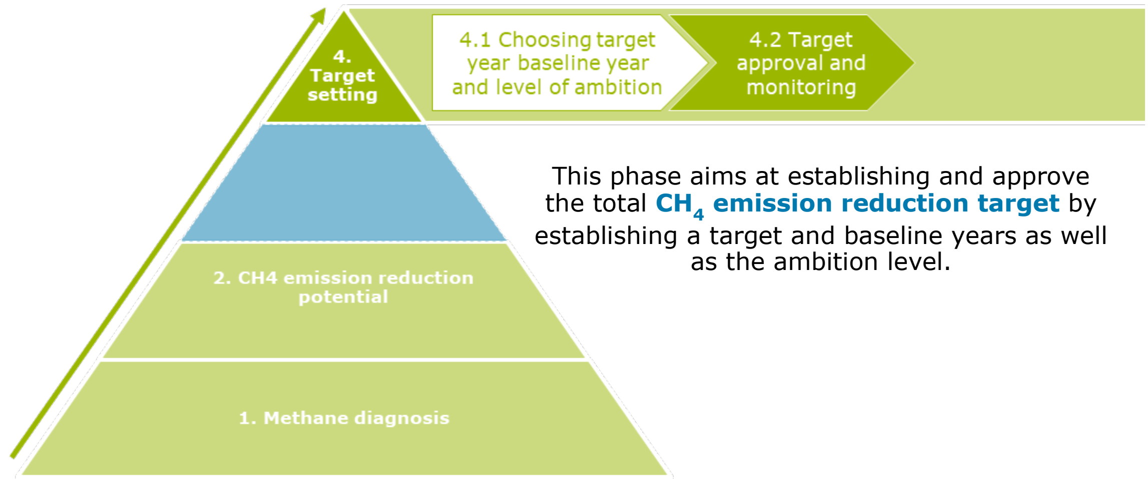
c) Choosing the level of ambition

Based on the target and baseline year and, taking into consideration the CH_4 emission reduction potential (*Phase 2*), companies should choose the level of ambition of their targets. Level of ambition will determine which BATs have to be implemented (it may not be necessary to implement all BATs to reach the level of ambition established).

Output:

Total CH_4 emission reduction for a target year compared to a baseline year (e.g. reduction of 12% (*ambition level*) of CH_4 emissions by 2030 (*target year*) compared to 2018 (*baseline year*)).

4. Target setting



This phase aims at establishing and approve the total **CH_4 emission reduction target** by establishing a target and baseline years as well as the ambition level.

4.2 Target approval:

Objective:

Approval of total CH_4 reduction target and methane reduction pathway by obtaining senior management commitment and transparency

Tasks

a) Target approval

Total CH_4 emissions reduction target as well as CH_4 reduction pathway should be corporate approved to guarantee that technical and economic resources are available to achieve targets.

After approval process, companies should consider sharing the commitment in external and public means (e.g. website, Annual Reports, press release) and internally to ensure that they are clear at all levels.

b) Target monitoring

Organizations should monitor and track performance against targets and set corrective measures as necessary. To this end, regular monitoring is recommended.

In addition, annual reporting and verification is recommended.

Output:

Total CH_4 target and CH_4 reduction pathway approved.

5 REFERENCES

- Potential ways the gas industry can contribute to the reduction of methane emissions - Report for the Madrid Forum. June 2019.
- Assessment of methane emissions for gas Transmission and Distribution system operators. WG_ME-485. MARCOGAZ 2019.
- The Greenhouse Gas Protocol. Corporate Accounting and Reporting Standard. Revised Edition.