

# Setting Corporate Targets for GHG Emission Reduction in Energy Management and GHG Reporting Schemes

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## Abstract

Energy management and carbon accounting schemes are increasingly being adopted as a corporate response to climate change. These schemes often demand the setting of ambitious targets for the reduction of corporate greenhouse gas emissions. There is however only limited empirical insight in the companies' target setting process and the auditing practice of certifying agencies that evaluate ambition levels of greenhouse gas reduction targets. We studied the target setting process of firms participating in the CO<sub>2</sub> Performance Ladder. The CO<sub>2</sub> Performance Ladder is a new certifiable scheme for energy management and carbon accounting that is used as a tool for green public procurement in the Netherlands. This study aimed at answering the question 'to what extent does the current target setting process in the CO<sub>2</sub> Performance Ladder lead to ambitious CO<sub>2</sub> emission reduction goals?'. The research methods were interviews with relevant stakeholders (auditors, companies and consultants), document reviews of the certification scheme, and an analysis of corporate target levels for the reduction of CO<sub>2</sub> emissions. The research findings showed that several certification requirements for target setting for the reduction of CO<sub>2</sub> emissions were interpreted differently by the various actors and that the conformity checks by the auditors did not include a full assessment of all certification requirements. The research results also indicated that corporate CO<sub>2</sub> emission reduction targets were not very ambitious. The analysis of the target setting process revealed that there was a semi-structured bottom-up auditing practice for evaluating the corporate CO<sub>2</sub> emission reduction targets, but the final assessment whether target levels were sufficiently ambitious were rather loose. The main conclusion is that the current target setting process in the CO<sub>2</sub> Performance Ladder did not necessarily lead to establishing the most ambitious goals for CO<sub>2</sub> emission reduction. This process and the tools to assess the ambition level of the CO<sub>2</sub> emission reduction targets need further improvement in order to maintain the CO<sub>2</sub> Performance Ladder as a valid tool for green public procurement.

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# 1 Introduction

Energy management and carbon accounting schemes have been increasingly adopted by firms as a corporate response to climate change (Sullivan, 2011; Stechemesser & Guenther, 2012; Schaltegger & Csutora, 2012). Energy management schemes enable organizations to follow a systematic approach in achieving continuous improvement of its energy or greenhouse gas (GHG) performance (ISO, 2011), while corporate carbon accounting schemes are concerned with measuring of GHG emissions at various levels (organizational, corporate, project, plant) for various purposes such as reporting, compliance, disclosure, auditing etc. (Ascuí & Lovell, 2011)<sup>1</sup>. These schemes can be part of either government-initiated policies and measures, voluntary corporate initiatives for GHG emission reduction or NGO-led partnerships for climate mitigation (e.g. Sheihing et al., 2013; Carbon Trust, 2008; WWF, 2013). In many energy management and carbon accounting schemes, setting corporate targets for GHG emission reduction is a key obligatory element. Target levels can either be negotiated, minimum (fixed) performance requirements or completely voluntary.

The aim of this exploratory research is to improve the understanding of the energy and GHG target setting process in energy management and carbon accounting schemes that require negotiated target setting. As an example, we will study the process of establishing targets for GHG emission reduction in the CO<sub>2</sub> Performance Ladder (CO<sub>2</sub>PL). The CO<sub>2</sub>PL is a relatively new certifiable scheme for energy management and GHG reporting that is used for green public procurement in the Netherlands (SKAO, 2012). Certification gives companies a competitive advantage in obtaining procurement contracts. Amongst others, the scheme requires participating firms to set ambitious targets for GHG emission reduction. Up till now it is however unknown how the specific scheme requirements for GHG target setting are interpreted by the various actors, how corporate GHG target setting and external auditing of works in practice, and whether

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<sup>1</sup> Energy management systems include the organizational structure, planning activities, responsibilities, procedures, processes and efforts for developing, implementing, monitoring and reviewing energy policies and objectives (ISO, 2011). Many of the implemented energy management standards will be based on the ISO 50001 standard for energy management (ISO, 2011). Corporate carbon accounting schemes are often based on standards such as the ISO 14064-1 standard (ISO, 2006) or the GHG protocol (WBCSD/WRI, 2004) for reporting GHG emissions.

the entire scheme leads to the setting of ambitious GHG reduction targets. The main research question to be answered in this paper is *‘to what extent does the current target setting process in the CO<sub>2</sub> Performance Ladder lead to ambitious corporate GHG emission reduction goals?’*.

This study builds on earlier research by Rietbergen & Blok (2013) on the CO<sub>2</sub>PL. They investigated, amongst others, the different types of GHG reduction targets set by companies participating in the scheme, the ambition level of these corporate GHG targets and the potential impact of the CO<sub>2</sub>PL scheme on CO<sub>2</sub> emission reduction.

## 2 Research methods and data collection

The certification requirements for setting GHG reduction targets were studied by reviewing various versions of the CO<sub>2</sub>PL handbook (Prorail, 2009; ProRail, 2010a; ProRail 2010b; SKAO, 2011; SKAO, 2012). A better understanding of the scheme’s requirements for setting GHG reduction targets was also obtained by conducting interviews with the current scheme owner SKAO (Independent Foundation for Climate Friendly Procurement and Business) as well as the previous scheme owner ProRail, the state owned company in the Netherlands that is responsible for network infrastructure management, rail capacity allocation and traffic control on the Dutch railway network.

More empirical insight in the target setting process was obtained by conducting interviews with relevant actors. The relevant actors were the (former) scheme owner, companies participating in the CO<sub>2</sub>PL (17 interviews), consultancies (5 interviews) and certifying agencies (CIs) (9 interviews). The semi-structured interviews included both standardized open-end interview questions and fixed response interview questions. The key interview topics were the interpretation of the certification requirements, the auditing practice of relevant certification requirements, the corporate GHG target setting in practise, and the assessment of the ambition level of the GHG reduction targets. Full anonymity was promised to the interviewees. Reports of the interviews were written and submitted to the interviewees for review and approval.

Quantitative insight in the ambition level of the GHG emission reduction targets was obtained by compiling CO<sub>2</sub> footprints and energy management plans of the participating companies. A more in-depth statistical analysis of GHG target levels was carried out to investigate the ambition level of these targets among the CIs and per certificate level.

### 3 Research findings and discussion

Table 1 shows the certification requirement, selected specifications and assessment guidelines for setting targets for the reduction of scope 1 and 2 CO<sub>2</sub> emissions (certification requirement 3.B.1). Scope 1 emissions are direct emissions from sources either owned or controlled by the company and scope 2 emissions are the indirect emissions from the generation of electricity purchased and consumed by the company.

Table 1: Certification requirement (R) 3.B.1, selected specifications (S) and assessment guidelines (G). SKAO (2012)

3.B.1	R	The company has drawn up a quantitative reduction objective for scope 1 & 2 emissions by the company and its projects, expressed in absolute values or percentages in relation to a reference year and within a fixed period of time, and has drawn up a related action plan, including the measures to be taken on the projects.
	S	The ‘quantitative emission reduction target is set at company level for scope 1 and 2 emission separately’.
	S	The CO <sub>2</sub> emission reduction target ‘must relate to the projects’.
	S	The CO <sub>2</sub> emission reduction target ‘must be significant and comparable to that of peers in the sector’.
	S	The GHG emission reduction target ‘must be chosen for the most dominant emissions’.
	G	‘The scale of the target, in the light of the starting point situation, is so meaningful that this can reasonably be described as a serious challenge’.

The interviews revealed that there were several ambiguities in the current certification scheme. These ambiguities were for example: what type of CO<sub>2</sub> emission reduction targets are allowed by the scheme?; When is a target comparable to peers in the sectors?; What is meant with the term ‘significant’?; When is a target a serious challenge?; etc. As a result, there was no full harmonized interpretation among the CIs of certain important requirements, criteria and definitions related to the setting of corporate CO<sub>2</sub> emission reduction targets. In addition, conformity checks by CIs did not always include a full assessment of key requirements explicitly mentioned in the specifications of the requirements and the assessment guidelines. There were various reasons for not checking conformity: auditors did not consider some criteria as useful, auditors did not understand certain criteria precisely, they had a lack of information to evaluate criteria or they did not know how to assess the requirements. These ambiguities and incomplete

conformity checks did not contribute to a rigorous process of establishing GHG reduction targets and evaluating target levels. Moreover these observation may at least suggest that a level playing field for firms is currently lacking if it comes to setting CO<sub>2</sub> emission reduction targets.

Companies used both top-down and bottom-up approaches to set the target levels for CO<sub>2</sub> emission reduction. In a top-down target setting process the target level was derived for the entire company at once without a detailed analysis of its reduction potential. Various reference values were used to set the target levels, including CO<sub>2</sub> emission reduction targets in national climate policies, benchmarks with other companies, credible minimum values (proposed by consultants) that would be approved by CIs, etc. A bottom-up target setting process is based on the potential CO<sub>2</sub> emission reduction of various measures that could be implemented in the company. In general the bottom-up target setting process includes: drawing up a CO<sub>2</sub> emission inventory and energy-audit; identifying the most dominant CO<sub>2</sub> emission sources; making an inventory of the possible reduction measures and potentials; selection saving measures; deciding about the target type; establishing target levels by calculating the impact of the selected measures; deciding about the base year and length of the commitment period; obtaining approval by the higher management. Remarkable observation of the bottom-up target setting process were that: the CO<sub>2</sub> reduction potential of these selected measures were rather indicative; in general explicit financial criteria were not been taken into account when setting the target level; projections of baseline emissions under a business-as-usual scenario were never made to evaluate the ambition level of the target; and decisions about the target levels for the reduction of scope 2 emission were often arbitrary.

Prior research by Rietbergen & Blok (2013) showed that the current target levels for CO<sub>2</sub> emissions reduction of companies involved in the CO<sub>2</sub>PL were sufficient to achieve the annual reduction rate necessary meeting climate goals of the non-ETS sectors in 2020. Though, the question remains to what extent are the current target levels a real serious challenge for companies? Our research indicated that corporate GHG emission reduction targets did not appear to be not very ambitious. First, CO<sub>2</sub> emission reduction targets of the companies involved in our study were reached relatively easily in the majority of the cases. Many companies even performed much better than agreed. Second, up till now companies took only relatively easy energy savings measures (the low hanging fruits). Third, firms generally tended to reduce risks by limiting ambition levels of GHG emission reduction targets; even a substantial number of

companies agreed that their targets were rather weak. Fourth, there were some loopholes in the scheme (ambiguous target setting, setting short term commitments and deliberately spreading efforts over time) that allowed firms to limit their efforts. Given the idea that ambitious goals must require a considerable effort to be achieved, we may conclude that current target levels cannot be qualified as ambitious goals yet.

The analysis of the auditing practice of certifying agencies revealed that there was a semi-structured bottom-up process for evaluating the corporate GHG targets. This bottom-up approach followed more or less the criteria in the CO<sub>2</sub>PL handbook. The final assessments of auditors whether target levels were sufficiently ambitious were however rather loose. This was supported with several findings. First, the interviews revealed that judging the target level and its substantiation was often based on gut feelings rather than sound analysis. Second, auditors often considered the increased consciousness of CO<sub>2</sub> management more important the target level itself. Third, target levels were almost never rejected by the CIs, suggesting that auditors agreed relatively easily with the proposed target levels. Fourth, CIs admitted that they could not put a lot of pressure on the firms due to a lack of coercive measures. Finally, there were some indications that CIs probably did not fully exert their influence on the target setting process due to their auditor – client dependent relationship.

A statistical analysis (Kruskal-Wallis test) of target levels of 231 companies was carried to evaluate whether there was a significant difference between the average target levels by CI. The results of the statistical analysis showed that there was only a significant difference (using a significance level of 0.05) between some group (CI) medians of CO<sub>2</sub> emission reduction targets measured against turnover. A significant difference between the group medians for volume targets for CO<sub>2</sub> emission reduction and CO<sub>2</sub> emission reduction targets measured against FTE could not be observed. This lack of significant difference could suggest that CIs have a rather harmonised idea about the ambitious target levels. However, this hypothesis was not supported by our findings that the auditors' judgements about target levels were rather loose. It is therefore more likely that similar target levels were the results of a peer review process among firms.

## 4 Conclusions and recommendations

Energy management and carbon accounting schemes emerged rapidly as a corporate response to climate change. These schemes often demand the setting of ambitious targets for

reduction of corporate GHG emissions. As an example we studied the target setting process of the CO<sub>2</sub>PL. The CO<sub>2</sub>PL is a certifiable scheme for GHG management that is used in green procurement process in the Netherlands. This study aimed at answering the question ‘to what extent does the current target setting process in the CO<sub>2</sub> Performance Ladder lead to ambitious corporate GHG emission reduction goals?’.

The main conclusions that can be drawn from our research are the following. First, we conclude that the current target setting practice is not a rigorous and uniform process mainly due to several ambiguities in the schemes and incomplete conformity checks. Second, we conclude that the current target levels for corporate GHG emission reduction cannot be qualified yet as ambitious. Last, we conclude that there is a semi-structured procedure for evaluating GHG emission reduction targets, but the final assessment whether target levels are sufficiently ambitious are rather loose. Overall, we can conclude that the current target setting process in the CO<sub>2</sub>PL does not necessarily lead to ambitious corporate GHG reduction goals as yet.

This research implies that in the specific case of the CO<sub>2</sub>PL target setting procedures must be improved. The findings of our research also advocate that further procedures or tools for assessing ambition levels of GHG emission reduction targets must be developed, especially because CO<sub>2</sub>PL certification provides participating firms certain financial benefits and enhances corporate reputations. Recommendations to improve the target setting process in the CO<sub>2</sub>PL are 1) rewrite the explanatory notes, include clear definitions and assessment criteria, and exclude some redundant requirements; 2) introduce guidance documents for setting CO<sub>2</sub> emission reduction targets such as CDP (2013); and 3) consider other type of target setting, such as benchmarking of energy saving measures, minimum performance levels or obligations that require the implementation of measures with maximum pay-back periods etc., see e.g. target setting procedures in the Superior Energy Performance programme (Scheihing, 2013) or the Long-term Agreements on Energy-Efficiency (Agentschapnl, 2013).

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