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**EVALUATING CORPORATE CLIMATE  
CHANGE REPORTING COMPLIANCE  
UNDER CSRD WITH ESRS E1  
STANDARDS**

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# 1 Abstract

This master's thesis examines the disclosure of climate-related information by large European utility companies under the Corporate Sustainability Reporting Directive (CSRD), utilizing the European Sustainability Reporting Standard **ESRS E1 (Climate Change)** as the assessment framework. A straightforward and traceable checklist method is developed, grounded in the nine core ESRS E1 disclosure requirements (E1-1 to E1-9), and implemented through evidence mapping (page/section references) and a transparent scoring system (0/1/2).

The method is first demonstrated on **Enel Group** (Research A) and then extended in the Final Project to a comparative analysis of five utilities: **Enel (Italy), ENGIE (France), Iberdrola (Spain), E.ON (Germany), and Ørsted (Denmark)**. Results show strong and consistent disclosure across the core operational requirements (transition planning, policies, actions, targets, energy, and Scope-based emissions). The main differences across companies emerge in the more challenging requirements, particularly **carbon credits/removals (E1-7), internal carbon pricing (E1-8), and anticipated financial effects of climate risks and opportunities (E1-9)**. Overall, the thesis provides a replicable approach for assessing ESRS E1 disclosure completeness using publicly available reports and identifies priority areas for improving comparability and decision-usefulness of climate reporting.

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## 4 Introduction

Climate change refers to long-term changes in temperature and weather patterns. While such changes may occur naturally due to variations in solar activity or significant volcanic eruptions, since the 19th century, human activities have become the main cause of climate change, primarily through the combustion of fossil fuels such as coal, oil, and gas (Union of concerned scientists, 2021).

As climate change becomes a key issue for public policy and financial markets, policymakers need clear and consistent information from companies about climate risks. Investors and the public rely on these reports to determine whether companies understand their climate risks, manage them effectively, and align their strategies with climate effect mitigation.

To improve sustainability reporting, the European Union introduced the Corporate Sustainability Reporting Directive (CSRD) and **the European Sustainability Reporting Standards (ESRS)** (European Commission, 2025). EU Assumes Obligatory ESG (Environmental, Social, and Governance) Reporting Standards. (European Commission , 2023). The first ESRS rules were adopted through Commission Delegated Regulation (EU) 2023/2772, which sets out how companies should structure and report their sustainability information to meet EU requirements (European Commission , 2023)

As ESRS are legal texts, their application requires consideration of subsequent official clarifications. A formal correction issued in 2024 amended parts of Delegated Regulation (EU) 2023/2772 (European Commission, 2024). Furthermore, a delegated regulation adopted in 2025 as a specific requirement, including updates to Appendix C of ESRS 1 and related adjustments in ESRS 2 (European Commission, 2025)

Within the ESRS, ESRS E1 (Climate Change) is a key standard. It asks companies to report on their climate strategies, transition plans, policies, actions, resources, targets, and greenhouse gas emissions. Where relevant, companies should also share the expected financial effects of major climate risks and opportunities (European Commission , 2023). ESRS E1 works together with ESRS 1 and ESRS 2, which set out general reporting rules and help explain how to use the topical standards (European Commission , 2023)

While the ESRS set out detailed reporting rules, applying them can be challenging, especially in the early stages and during phase-in stages. The 2025 amendment allows some companies to temporarily ignore some certain data points in their first year, including some ESRS E1 disclosures, if they meet specific conditions (European Commission, 2025). As a result, compliance checks should distinguish between omissions allowed by these rules and those not clearly promoted by the ESRS.

## 4.1 Aim and scope of Research A

This Research A establishes the first phase of my thesis and focuses on building the theoretical and technical basis for assessing corporate climate reporting under the CSRD framework, with specific attention to ESRS E1. The study relies solely on publicly available corporate reports.

The objectives of Research A are to:

1. Present the regulatory context of sustainability reporting in the EU, with emphasis on the ESRS framework and ESRS E1 (European Commission , 2023) (European Commission, 2024) (European Commission, 2025).
2. Translate ESRS E1 disclosure requirements into a practical checklist supported by evidence mapping (page/section references) (European Commission , 2023)
3. Define a methodology to assess corporate reporting against ESRS E1 while accounting for relevant corrections and phase-in provisions (European Commission, 2024) (European Commission, 2025).

This phase does not aim to calculate emissions or assess the environmental performance technically. It also focuses on whether the climate-related information required by ESRS E1 is presented in a visible and sufficiently complete way. The following phase (Research/Project B) will build on the same framework by applying the checklist more widely and presenting structured findings.

# 5 Regulatory Framework: From CSRD to ESRS and ESRS E1

## 5.1 From non-financial reporting NFRD to CSRD

Sustainability reporting in the European Union has transitioned from the Non-Financial Reporting Directive (NFRD) regime to a more structured and legally supported system. The current EU framework aligns sustainability reporting requirements with the Corporate Sustainability Reporting Directive (CSRD) timetable, informing the companies that use the European Sustainability Reporting Standards (ESRS) to prepare their sustainability statements (European Commission , 2023).

An essential development in implementing these requirements is the adoption of a legally binding set of sustainability reporting standards through delegated regulation. Commission Delegated Regulation (EU) 2023/2772 establishes the ESRS, which undertakings must apply to conduct sustainability reporting in accordance with Directive 2013/34/ (European Commission , 2023). This regulation is directly applicable in all Member States and introduces the initial set of ESRS, comprising both cross-cutting and topical standards (European Commission , 2023).

## **5.2 ESRS architecture: Cross-cutting standards (ESRS 1 and ESRS 2)**

The ESRS framework is structured into cross-cutting standards and topical standards (European Commission, 2023). ESRS 1 provides the general logic and requirements for preparing sustainability information, including key principles for reporting, materiality considerations, reporting boundaries, value chain aspects, and transitional provisions (European Commission, 2023). ESRS 2 defines general disclosures that apply across sustainability topics, including governance, strategy, and processes for identifying and managing impacts, risks, and opportunities, and provides a consistent structure that supports topical disclosures (European Commission, 2023).

## **5.3 ESRS E1: Climate Change (what it requires)**

ESRS E1 requires companies to disclose structured information across strategy, impacts/risks/opportunities, policies, actions/resources, and metrics/targets (European Commission, 2023)

For the purpose of this thesis, ESRS E1 is operationalised as a checklist: each E1 requirement becomes a verifiable item, and corporate reports are assessed based on whether the required disclosure is present, traceable (page/section), and sufficiently complete (European Commission, 2023)

## **5.4 Updates, corrigenda, and phase-in amendments (2024 and 2025)**

A corrigendum was issued in 2024 to correct parts of Delegated Regulation (EU) 2023/2772, including corrections affecting cross-references and wording within the standards (European Commission, 2024). A later delegated regulation, adopted in 2025, amended Delegated Regulation (EU) 2023/2772 regarding the postponement and phase-in of certain disclosure requirements for certain undertakings (European Commission, 2025).

These phase-in rules matter for compliance analysis because the absence of some data points may be legitimate in the early years, depending on the undertaking's situation and the applicable transitional provisions (European Commission, 2025). Therefore, the methodology distinguishes between missing disclosures that may be permitted under phase-in provisions and those that appear inconsistent with ESRS requirements.

## **5.5 Scope and Reporting Requirements (Who must report, thresholds, and phase-ins)**

This subsection clarifies which undertakings fall within the scope of the EU sustainability reporting regime and highlights the main quantitative thresholds (employees and financial criteria), as well as phase-in/exemptions that can affect specific disclosures. The scope rules are primarily defined in the Accounting Directive 2013/34/EU (size criteria), as amended by the CSRD Directive (EU) 2022/2464, while the “what to report” content is defined through ESRS adopted via delegated regulation. (EFRAG, 2025) (European Commission, 2013).

### 5.5.1 “Large undertakings” threshold (employees + financial criteria)

Under the Accounting Directive size criteria, an undertaking is generally considered **large** if it exceeds **at least two of the following three** thresholds:

- **Average number of employees: 250**
- **Net turnover: €40 million**
- **Balance sheet total: €20 million**

Therefore, **“250 employees” alone is not sufficient** by itself; the undertaking must meet **2 out of 3** criteria to be classified as “large” under these size rules.

### 5.5.2 CSRD scope categories (who is required to report)

The CSRD extends sustainability reporting obligations beyond the previous regime by requiring sustainability reporting for:

- **All large undertakings**, and
- **All undertakings (except micro-undertakings) with securities admitted to trading on an EU-regulated market** (i.e., listed companies), among other categories defined through amendments to the Accounting Directive framework.

Practical guidance from the European Commission also clarifies that CSRD does not regulate voluntary sustainability disclosure for undertakings outside CSRD scope (e.g., non-listed SMEs), confirming that the mandatory nature is tied to being “in scope.”

### 5.5.3 Implications for this thesis

For the purpose of this thesis, all companies selected for analysis will be chosen only if they are clearly within the CSRD scope (i.e., sufficiently large, and subject to ESRS-based sustainability reporting). This ensures that applying the ESRS E1 checklist is appropriate and that the required climate disclosures are expected to be available in their published reports.

## 6 Literature Review

### 6.1 The role of climate-related corporate disclosure

Climate-related disclosure has become a key component of corporate reporting because climate change affects both the environment and the financial performance of undertakings. Stakeholders increasingly use climate information to assess whether companies understand their exposure to climate risks and are managing the transition to lower-carbon business models. Climate disclosure is therefore not only a communication tool, but also part of risk governance and strategic planning. Frameworks such as the Task Force on Climate-related Financial Disclosures (TCFD) have contributed to a shared understanding of what “useful” climate disclosure should include—especially around governance, strategy, risk management, and metrics and targets. The TCFD recommendations, for example, emphasise the disclosure of climate-related risks and opportunities, and encourage scenario analysis to assess resilience under different climate pathways (TCFD, 2017)

From an academic perspective, climate reporting has often been discussed in relation to transparency, accountability, and comparability. However, voluntary reporting environments historically produced heterogeneous outcomes: companies could choose different frameworks, disclose different types of metrics, and communicate climate commitments with varying levels of detail. As a consequence, climate disclosures were frequently difficult to compare across companies and sectors, and users could not always distinguish robust climate strategies from generic statements.

### 6.2 From voluntary frameworks to mandatory EU sustainability reporting

The European Union progressively moved from earlier disclosure approaches to a more structured sustainability reporting regime. The rationale behind this shift is the recognition that market participants require consistent information to price climate risks and evaluate corporate sustainability performance. Under the CSRD framework, companies within scope must use the European Sustainability Reporting Standards (ESRS), adopted by the European Commission, to prepare their sustainability statements (European Commission, 2025).

The ESRS were introduced to provide a harmonized structure and to reduce fragmentation caused by multiple voluntary reporting options. The standards define disclosure requirements that undertakings must follow, including cross-cutting standards (ESRS 1 and ESRS 2) and topical standards such as ESRS E1 (Climate Change) (European Commission, 2023). The literature generally supports the policy assumption that standardization improves comparability and reduces selective reporting, although early-stage implementation can still involve interpretation challenges and uneven quality across companies.

### **6.3 Evidence on mandatory non-financial reporting effects (NFRD experience)**

A key part of the literature analyses whether mandatory reporting improves transparency and sustainability outcomes. Studies focusing on the EU Non-Financial Reporting Directive (NFRD) provide useful background because NFRD was an earlier mandatory step in the EU journey and helps anticipate implementation patterns under CSRD/ESRS.

For example, Cuomo examined the effects associated with the EU NFRD and discussed evidence of changes in corporate transparency and sustainability-related outcomes after mandatory reporting requirements were introduced (Cuomo, et al., 2024). And Cicchiello discussed how mandatory non-financial reporting regulations can affect ESG outcomes and disclosure practices (Cicchiello, et al., 2022).

Although results vary across studies and contexts, a consistent finding is that mandatory rules tend to reduce symbolic disclosure and promote more structured reporting. However, compliance alone does not ensure high-quality, decision-useful reporting. Organizations may continue to encounter difficulties in consistently measuring climate-related metrics, gathering value-chain data, and delivering transparent scenario-based analyses.

These findings underscore the rationale for this thesis. Even with mandatory standards, it remains a practical concern whether corporate reports disclose the required information, present it with sufficient clarity, and enable users to trace disclosures to specific standard requirements.

### **6.4 ESRS structure and the centrality of climate reporting**

Under ESRS, climate change is treated as a central sustainability topic. ESRS E1 is designed to enable users to understand: (i) how the undertaking affects climate change, (ii) how climate change affects the undertaking, and (iii) how climate-related considerations are embedded in strategy, governance, and performance management (European Commission , 2023).

ESRS E1 requires disclosures covering transition planning, policies, actions and resources, targets, energy, and greenhouse gas emissions metrics (including Scope 1, Scope 2, and Scope 3), climate-related risks and opportunities, and anticipated financial effects where relevant. Importantly, ESRS E1 is not intended to be applied in isolation: it must be read alongside ESRS 1 (General Requirements) and ESRS 2 (General Disclosures), because cross-cutting requirements shape how climate disclosures are structured and connected to governance and strategy (European Commission , 2023).

In this thesis, this structure allows for a checklist approach. Each ESRS E1 disclosure requirement can be turned into a specific item to verify. Having clear disclosure requirements makes it easier to repeat the assessment and helps reduce personal bias.

### **6.5 Transition plans, scenario analysis, and practical implementation issues.**

One of the most challenging aspects of climate reporting is disclosing credible transition plans and scenario-based resilience. TCFD recommends that organizations release the resilience of their strategies under different climate-related scenarios and clarify how they integrate climate

risks into planning (TCFD, 2017). ESRS E1 similarly emphasizes transition planning under E1-1, including how undertakings intend to adapt their strategies to align with climate goals and manage transition risks (European Commission, 2023).

EFRAG has also published non-authoritative implementation guidance to support companies in disclosing transition plans in line with ESRS requirements, acknowledging that transition plan reporting can be complex and requires a consistent structure (EFRAG, 2025). In practice, companies may describe transition edges qualitatively but struggle to provide various links between actions, targets, investment plans, timelines, and measurable outcomes. This makes transition plan disclosures a key area for assessing reporting quality and completeness.

## **6.6 Scope 3 emissions, value chain boundaries, and data constraints**

The ESRS E1 standard requires undertakings to disclose greenhouse gas (GHG) emissions by Scope 1, Scope 2, and Scope 3, as these categories distinguish between direct emissions and different forms of indirect emissions (European Commission, 2023). Scope 1 covers direct emissions that come from sources the organization owns or controls.

(“What Are the Three Main Categories of the Greenhouse Gas (GHG) Protocol ...”) Scope 2 covers indirect emissions associated with purchased electricity, heat, steam or cooling consumed by the undertaking. Scope 3 includes all other indirect emissions occurring across the undertaking’s value chain, both upstream and downstream, such as emissions from purchased goods and services, transport, use of sold products, and end-of-life treatment (European Commission, 2023).

In practice, Scope 3 often represents the largest share of total emissions for many sectors, but it is also the most challenging to measure because it requires data from suppliers, customers, and other value-chain partners. This creates uncertainty in system boundaries, data availability, and consistency, and may lead to partial estimation methods. By contrast, Scope 1 and Scope 2 emissions are generally easier to quantify because they rely primarily on internal operational data and purchased energy records.

The official EU texts acknowledge that early adoption may involve practical difficulties. The 2025 amendment to Delegated Regulation (EU) 2023/2772 introduced phase-in measures and postponements for certain disclosure requirements for specific undertakings (European Commission, 2025). In a compliance assessment, this means that missing Scope 3-related datapoints (or incomplete value chain coverage) may, in some cases, reflect transitional provisions rather than a clear reporting failure. Therefore, the interpretation of missing information should be stated transparently and assessed in light of applicable phase-in rules (European Commission, 2025).

## **6.7 Assurance, reliability, and the risk of selective disclosure**

A recurring theme in sustainability reporting research is the risk that companies may provide selective disclosures that emphasize positive achievements while underreporting negative impacts or uncertainties. Standardization and the move toward assurance are intended to address this issue by increasing reliability and consistency. ESRS aims to improve the decision-usefulness of sustainability information by requiring structured disclosures with traceability and consistency across reporting topics (European Commission, 2023).

In this context, a checklist-based approach supports transparency: rather than relying on general impressions, the assessment records whether each required disclosure item is present and where

it appears in the report. Such an approach does not verify the accuracy of the disclosed numbers, but it improves clarity about whether the company provides the required information and whether users can easily locate it.

## **6.8 Core list differentiation as mentioned in the Official Journal (ESRS E1)**

### **6.8.1 Disclosure Requirement E1-1 – Transition plan for climate change mitigation**

**Definition:** The company must explain whether it has a **transition plan** to align its strategy and business model with climate-mitigation goals (e.g., decarbonisation pathway, key levers/actions, investments and financing needs, governance approval, and progress tracking).

### **6.8.2 Disclosure Requirement E1-2 – Policies related to climate change mitigation and adaptation.**

**Definition:** The company must disclose its **policies** for managing climate change mitigation and/or adaptation (i.e., the policy framework used to manage climate-related impacts, risks and opportunities), including how the policies address mitigation and/or adaptation topics.

### **6.8.3 Disclosure Requirements E1-3 – Actions and resources in relation to climate change policies**

**Definition:** The company must describe the **key actions** taken/planned to implement its climate policies and the **resources** allocated (including how actions link to decarbonisation levers and, where relevant, the expected or achieved emissions reductions and significant CapEx/OpEx linked to the actions).

### **6.8.4 Disclosure Requirement E1-4 – Targets related to climate change mitigation and adaptation.**

**Definition:** The company must disclose its **climate targets** (mitigation and/or adaptation), including what the targets are, how they are defined, and how progress is tracked over time (e.g., base year, milestones, and performance vs. target).

### **6.8.5 Disclosure Requirement E1-5 – Energy consumption and mix**

**Definition:** The company must disclose information on its **energy consumption** and **energy mix** (how much energy is used and from which sources), in a way that supports understanding of climate impacts and transition efforts.

### **6.8.6 Disclosure Requirements E1-6 – Gross Scopes 1, 2, 3, and Total GHG emissions**

**Definition:** The company must disclose **gross greenhouse gas emissions** for **Scope 1, Scope 2, and Scope 3**, plus total emissions, and explain the **methodology and boundaries** used for measurement (including how the value chain boundary is treated).

### **6.8.7 Disclosure Requirement E1-7 – GHG removals and GHG mitigation projects financed through carbon credits.**

**Definition:** The company must disclose whether it uses **GHG removals** and/or supports **mitigation projects via carbon credits** and provide transparent information on such use (so users understand the role of credits/removals versus direct emissions reductions).

### **6.8.8 Disclosure Requirement E1-8 – Internal carbon pricing**

**Definition:** The company must disclose whether it uses **internal carbon pricing** (e.g., a shadow price or internal CO<sub>2</sub> price) and explain how it is used in decision-making (planning, investment decisions, risk management).

### **6.8.9 Disclosure Requirement E1-9 – Anticipated financial effects from material physical and transition risks and potential climate-related opportunities.**

**Definition:** The company must disclose the **anticipated financial effects** (where relevant) of material **physical risks**, **transition risks**, and potential **climate opportunities** across time horizons, so users can understand how climate factors may affect financial performance and position.

## **6.9 Regulatory evolution and implications for research design**

The EU sustainability reporting framework is changing. The European Commission regularly publishes updates on corporate sustainability reporting and its implementation, and public sources have discussed efforts to simplify the framework (European Commission, 2025; Reuters, 2025). In this thesis, I address these changes by clearly stating which official ESRS legal texts serve as the reference point: Delegated Regulation (EU) 2023/2772, its corrigendum, and later amendments (European Commission, 2023) (European Commission, 2024) (European Commission, 2025). This approach ensures a stable and transparent basis for the compliance checklist and helps maintain consistency in the analysis.

## 6.10 Literature review summary and link to the thesis approach

Overall, the literature supports three insights relevant to this thesis:

1. Climate disclosure is increasingly necessary for assessing corporate resilience and transition readiness, and frameworks such as TCFD have influenced the global understanding of what climate disclosure should cover (TCFD, 2017).
2. Mandatory reporting regimes (e.g., the NFRD experience) can improve structured disclosure and transparency, but disclosure quality may still vary, and implementation challenges remain (Cuomo, et al., 2024) , (Cicchello, et al., 2022).
3. ESRS E1 provides a detailed disclosure structure for climate change, but early adoption involves practical challenges (transition plans, scenario analysis, Scope 3 data), and phase-in provisions must be considered when interpreting missing disclosures (EFRAG, 2025), (European Commission , 2023), (European Commission, 2025).

Based on these insights, the thesis adopts a checklist-based content analysis approach. This method translates ESRS E1 requirements into verifiable items and evaluates corporate reports based on the presence, traceability, and completeness of required disclosures. The approach is suitable for a case study design and can be expanded in Research/Project B to include more companies or sectors.

## 7 Research Methodology

### 7.1 Research design

This study employs a **document-based research design** utilizing **structured content analysis**. Its objective is to determine whether publicly available corporate reports include the climate-related disclosures mandated by **ESRS E1 (Climate Change)** and whether these **disclosures are presented in a clear and traceable manner**. The analysis examines the presence, structure, and traceability of disclosures, rather than verifying the accuracy of reported data or conducting technical emissions calculations (European Commission , 2023).

Structured content analysis is appropriate for this research because ESRS E1 outlines explicit disclosure requirements that can be operationalized into verifiable items. This approach enhances transparency and replicability, as the same checklist can be consistently applied across multiple reports (European Commission , 2023).

### 7.2 Scope of analysis

Research A is designed to build the conceptual and methodological foundation for the thesis. The scope is intentionally limited to ensure feasibility and clarity. The analysis is restricted to:

- **One topical standard:** ESRS E1 (Climate Change), interpreted in connection with ESRS 1 (General Requirements) and ESRS 2 (General Disclosures) (European Commission , 2023).
- **Public corporate reporting documents** (e.g., sustainability report, integrated report, annual report, climate report) for a selected company and reporting year.
- **Official legal basis:** Commission Delegated Regulation (EU) 2023/2772 as the reference for ESRS requirements, considering the 2024 corrigendum and the 2025 amendment related to corrections and phase-in/postponement provisions (European Commission , 2023) (European Commission, 2024) (European Commission, 2025).

This scope allows Research A to provide a defensible method that can be extended in Research/Project B to a wider set of companies or years.

### 7.3 Data sources and document selection criteria

The data sources are **publicly available corporate documents** published on official company channels. Documents are selected using the following criteria:

1. **Official publication:** The document is published by the company and intended for stakeholders (annual report, sustainability report, integrated report).
2. **Relevance to climate disclosure:** The document contains sections addressing climate change, emissions, targets, climate risks, or environmental strategy.
3. **Time frame:** The document corresponds to the selected reporting period.
4. **Accessibility:** full text is available publicly.

No internal company data, interviews, or confidential information are used.

## 7.4 Operationalization: translating ESRS E1 into a checklist

The main step in the method is turning ESRS E1 requirements into a practical checklist. This checklist comes straight from the ESRS legal text and covers all climate disclosure requirements under ESRS E1 (E1-1 to E1-9) (European Commission , 2023). The checklist is created in three steps:

### Step 1: Requirement extraction.

Disclosure requirements are extracted from ESRS E1 and organized by ESRS structure. Key categories include transition planning, policies, actions and resources, targets, energy and emissions metrics (Scope 1–2–3), and climate-related impacts, risks, opportunities, and anticipated financial effects (European Commission , 2023).

### Step 2: Checklist item formulation

Each requirement is transformed into a practical verification question that can be answered through report review. For example:

- “Is there a disclosed transition plan for climate change mitigation?” (E1-1)
- “Are Scope 1, Scope 2, and Scope 3 emissions disclosed, including boundary and methodology notes?” (E1-6)
- “Are climate-related risks and opportunities described and linked to strategy?” (E1-9)  
These checklist items remain consistent with ESRS wording and intent (European Commission, 2023).

### Step 3: Evidence criteria definition

A disclosure is considered “present” only when the report provides explicit content, and it is possible to record an exact reference (chapter/section/page). General statements without supporting details are treated as partial.

## 7.5 Evidence mapping and coding protocol.

To increase transparency and reduce subjectivity, each checklist item is documented using evidence mapping protocol. For each item, the researcher records:

- **Disclosure status:** Yes / Partial / No
- **Evidence location:** document name and page/section reference
- **Evidence notes** short description of what the report states.

This protocol ensures that results are traceable.

## 7.6 Completeness rating (simple scoring)

To summarize findings consistently, the checklist may include a simple completeness score:

- **0 = Not disclosed**
- **1 = Partially disclosed / unclear/insufficient detail**
- **2 = Clearly disclosed and traceable with adequate detail**

This scoring is intentionally simple. It does not claim to measure performance; rather, it provides a structured way to summarize disclosure completeness and traceability in relation with ESRS E1 requirements (European Commission , 2023).

## 7.7 Treatment of corrigenda and phase-in provisions

Given that ESRS are legal instruments, the analysis applies the standards as adopted and subsequently clarified. The primary reference is Commission Delegated Regulation (EU) 2023/2772 (European Commission, 2023). The methodology incorporates the 2024 corrigendum, which corrects specific provisions, as well as the 2025 amendment that introduces postponement and phase-in adjustments for certain disclosure requirements applicable to some undertakings (European Commission, 2024) (European Commission, 2025).

If a datapoint is missing, the analysis documents the omission and determines whether it is attributable to phase-in flexibility rather than non-compliance. This approach prevents unjustified conclusions and ensures that the assessment remains consistent with the relevant regulatory context (European Commission, 2025).

## 7.8 Reliability and quality assurance

To strengthen reliability, the following checks are applied:

1. **Consistency check:** the same Yes/Partial/No definitions are applied across all checklist items.
2. **Traceability rule:** no item is rated “Yes” without a specific location reference in the report.
3. **Re-check step:** a subset of checklist items is reviewed twice to confirm stable coding decisions.

These steps are suitable for Research A and provide sufficient rigor for a document-based case study.

## 7.9 Ethical considerations

The research uses only publicly available corporate documents and does not involve personal data, human participants, or confidential information. Ethical risks are minimal. The analysis is presented neutrally and focuses on disclosure completeness and traceability, not on judging company intent.

## 7.10 Tools and outputs

The methodology is designed to be executed using simple tools:

- **Microsoft Word** for writing the report.
- **Microsoft Excel** (optional) for organizing the checklist, ratings, and summary tables.

Research A outputs include:

1. A clearly defined ESRS E1 checklist and coding protocol.
2. A traceable evidence map of disclosures for the selected corporate report(s).
3. A structured summary of disclosure coverage and common gaps.
4. A methodology that can be extended in Research/Project B.

(European Commission, 2023) (European Commission, 2024) (European Commission, 2025).

## 8 Case Study Application (Research A Demonstration: Enel Group)

### 8.1 Purpose of this subsection

To demonstrate the feasibility and replicability of the proposed ESRS E1 checklist method, Research A includes a single case-study application using a publicly available corporate report. This demonstration supports methodological clarity and provides a baseline structure that can be extended to other companies in Research B.

### 8.2 Case selection and document

The selected case study is **Enel Group**, using the **Enel Integrated Annual Report 2024** as the primary source document (Enel, 2024). The report is treated as the main disclosure container for climate-related reporting and sustainability information prepared under the EU reporting context.

### 8.3 Analytical unit and scope (core-only)

The case-study assessment is performed at the **Disclosure Requirement (DR) level** for ESRS E1, covering the nine core requirements:

- E1-1 Transition plan
- E1-2 Policies
- E1-3 Actions and resources
- E1-4 Targets,
- E1-5 Energy consumption and mix
- E1-6 Scope 1, 2, 3 and total GHG emissions
- E1-7 Removals and carbon credits
- E1-8 Internal carbon pricing
- E1-9 Anticipated financial effects of material climate risks and opportunities.

This DR-level approach is intentionally selected for Research A to ensure feasibility and clarity. A datapoint-level assessment using the full IG3 datapoint list is optional and may be reserved for the final project.

### 8.4 Evidence extraction and mapping procedure

For each ESRS E1 DR (E1-1 to E1-9), the report is reviewed to identify relevant passages, tables, or narrative disclosures. Evidence is recorded using a structured mapping protocol:

1. **Locate disclosure evidence** using keywords linked to each DR (e.g., “transition plan,” “Scope 1”, “Scope 3”, “targets”, “scenario analysis”, “financial effects”).
2. **Record exact traceability references**, including document section/chapter and page number.

3. **Summarize the disclosed content** in 1–3 lines, focusing on what the report states rather than interpretation.
4. **Assign a disclosure status** (Yes / Partial / No) based on presence and completeness.
5. **Optionally assign a score** (0/1/2) to support later comparison and expansion.

A disclosure is considered “Yes” only when it is traceable to a specific report location and includes sufficient detail to address the core ESRS E1 requirement. A disclosure is considered “Partial” when the report addresses the topic but with limited specificity, unclear boundaries, or missing key elements.

## 8.5 Use of “incorporation by reference.”

If the report refers to other parts of the same document (or clearly identified official linked documents) as the location of required information, this is treated as “incorporation by reference.” In these cases, the evidence location is recorded where the referenced information is actually disclosed, and the traceability remains explicit (section/page mapping).

## 8.6 Output of the Research A demonstration

The output is a completed **ESRS E1 core checklist table** for Enel Group with:

- E1-1 to E1-9 rows
- Evidence locations (page/section)
- Status (Yes/Partial/No) and optional score
- Short notes on gaps, ambiguity, or dispersion of information

This output is used in Research A to illustrate how the method works in practice and to identify typical implementation patterns (e.g., strong coverage of emissions/targets but weaker quantification of financial effects).

## 8.7 Bridge to Research/Project B (how it could be expanded)

The Enel case-study demonstration provides a structured base that can be expanded in Research/Project B through one or more of the following extensions:

1. **Increase granularity:** move from DR-level to **datapoint-level** using IG3 for selected high-impact areas (e.g., E1-1, E1-4, E1-6, E1-9).
2. **Increase sample size:** add additional companies (same sector or cross-sector) to enable comparison.
3. **Improve scoring depth:** refine the scoring rubric and introduce weighted scoring or completeness percentages.
4. **Add comparability analysis:** compare disclosure organization, traceability, and level of quantification across companies and years.

This staged approach ensures Research A remains feasible while making Research B a direct continuation rather than a new project.

## 8.8 Results (Case Study Demonstration: Enel Group, Integrated Annual Report 2024)

“This section presents the results of applying the ESRS E1 core checklist (E1-1 to E1-9) to Enel’s Integrated Annual Report 2024. For each disclosure requirement, the evidence was mapped to specific pages and assessed as Yes/Partial/No.”

Table 1 ESRS E1 Core Checklist Results (Enel Group, Integrated Annual Report 2024)

Enel Group (Italy) - ESRS E1 Core Checklist (Evidence-mapped)						
Scoring: 0 = No evidence found, 1 = Partial, 2 = Yes (clear + traceable).						
Evidence pages: PDF page numbers.						
ESRS E1 DR	Core requirement	Evidence location (Enel IAR 2024)	Status	Score	Short quote summary (≤25 words)	Notes (what to improve / why partial)
E1-1	Transition plan for climate change mitigation	p. 96 (strategy section) and p. 127 (climate change section)	Yes	2	“ESRS E1-1 – Transition plan for climate change mitigation”	Clearly labelled and discussed.
E1-2	Policies for mitigation and adaptation	p. 122	Yes	2	“ESRS E1-2 – Policies related to climate change mitigation and adaptation”	Clear policy disclosure section.
E1-3	Actions and resources (implementation)	p. 127	Yes	2	“ESRS E1-3 – Actions and resources ...”	Actions/resources are explicitly linked to climate topic.
E1-4	Targets (mitigation/adaptation)	p. 127 (ESRS reference appears in climate change section)	Yes	2	“ESRS E1-4 – Targets ...” (appears within E1 climate section)	Targets are referenced.
E1-5	Energy consumption and mix	p. 148	Yes	2	“ESRS E1-5 – Energy consumption and mix”	Energy metrics are included.
E1-6	Scope 1–2–3 and total GHG emissions + method	p. 142	Yes	2	“ESRS E1-6 – Gross Scopes 1, 2, 3 and Total GHG emissions”	Strong section, with details.
E1-7	GHG Removals + carbon credits	p. 149	Partial	1	“Other information: buying carbon credits in voluntary markets”	Carbon credits are disclosed, but not clearly structured as “E1-7 removals/credits” DR section.
E1-8	Internal carbon pricing	Not found (keyword search did not return a clear disclosure)	No	0	—	Not found
E1-9	Anticipated financial effects + climate risks/opportunities	p. 104	Partial	1	“Impacts, risks and opportunities related to climate change”	Risks/opportunities are discussed; anticipated financial effects are not fully quantified across all material items (treat as partial).
Total score				14		

“This appendix reports the application of the ESRS E1 core checklist (E1-1 to E1-9) to Enel Group’s Integrated Annual Report 2024. Each item is assessed for presence and traceability using report page evidence and a simple 0/1/2 completeness score.”

### 8.8.1 Overview of the assessment output

This section presents the results of applying the **ESRS E1 core checklist (E1-1 to E1-9)** to the **Enel Group Integrated Annual Report 2024**. The purpose is to demonstrate how the Research A methodology works in practice through a traceable document-based assessment. Each disclosure requirement (DR) was reviewed in the report and mapped to an evidence location (page/section), then rated as **Yes / Partial / No** and assigned a simple completeness score (**2 / 1 / 0**).

Overall, the results indicate that Enel’s report provides explicit coverage for most core climate disclosure requirements. The analysis identified clear and traceable disclosure for **E1-1 to E1-6**, while **E1-7** and **E1-9** were assessed as **Partial**, and **E1-8** was assessed as **Not found** in the reviewed document.

### 8.8.2 Summary of disclosure coverage (E1-1 to E1-6)

The report contains clear and traceable climate disclosure sections aligned to ESRS E1 structure for the following requirements:

- **E1-1 Transition plan:** the report includes a dedicated ESRS-labelled disclosure on the transition plan, allowing direct mapping to the standard requirement.
- **E1-2 Policies:** climate mitigation and adaptation policy disclosures are presented in a structured way, enabling straightforward evidence mapping.
- **E1-3 Actions and resources:** the report provides disclosures describing actions and resources linked to climate objectives, which supports traceability at the DR level.
- **E1-4 Targets:** climate targets are disclosed and referenced within the ESRS E1 climate section.
- **E1-5 Energy consumption and mix:** energy consumption and mix information is disclosed in a dedicated section aligned to E1-5.
- **E1-6 GHG emissions (Scope 1, 2, 3 and total):** the report includes a dedicated emissions section aligned to E1-6.

For Research A purposes, these items were rated **Yes (Score 2)** because the disclosures are **explicitly present, clearly traceable**, and organised in a way that supports compliance mapping.

### 8.8.3 Why E1-7 was rated “Partial” (carbon credits/removals)

**E1-7 (GHG removals and carbon credits)** was rated **Partial (Score 1)** because the report contains relevant information on voluntary carbon credits, but the disclosure is not presented as a clear, fully structured ESRS E1-7 disclosure requirement section. Instead, the evidence appears under a subsection labelled as “other information” related to carbon credits.

From a compliance-assessment perspective, this creates two limitations:

1. **Disclosure structure and traceability:** Although the content exists and is traceable to a page reference, it is not clearly positioned as the formal E1-7 disclosure block. This can reduce clarity for users who expect E1-7 content to be reported under a dedicated E1-7 heading and aligned with ESRS phrasing.
2. **Completeness at DR level:** A partial rating is appropriate where the report mentions the use of credits but does not clearly address the full scope expected under E1-7 (e.g.,

distinctions between removals and credits, how credits are used in claims, boundaries, and the extent to which they are integrated into targets).

For Research A, the key point is that **the topic is addressed**, but the presentation suggests that the disclosure may be **incomplete or not fully structured** against the E1-7 requirement. This is a typical pattern in early-stage alignment, where companies disclose information, but not always in the clearest ESRS-labelled structure.

#### 8.8.4 Why E1-8 was rated “Not found” (internal carbon pricing)

**E1-8 (Internal carbon pricing)** was rated **Not found (Score 0)** because no clear disclosure was identified in the report that explicitly describes an internal carbon price (or similar “shadow price”) and how it is applied.

This does not necessarily mean internal carbon pricing is absent in practice. It may mean one of the following:

- The company **does not use internal carbon pricing**, in which case a statement such as “not applied” or “not used” would normally clarify the issue for the reader.
- The company may use internal carbon pricing, but the disclosure could be **located elsewhere** (e.g., risk management or finance-related sections) and not clearly labelled in an ESRS E1-8 way.
- The report may address carbon pricing only in an external/regulatory sense (e.g., market mechanisms) rather than **internal** pricing used for decision-making.

For a traceable content analysis, the absence of an explicit internal carbon pricing disclosure leads to a conservative interpretation: **Not found / not disclosed in the reviewed document**.

#### 8.8.5 Why E1-9 was rated “Partial” (anticipated financial effects)

**E1-9 (Anticipated financial effects from material climate-related risks and opportunities)** received a **Partial rating (Score 1)**. The report discusses climate-related impacts, risks, and opportunities, and gives quantification ranges for these areas. Still, the effect is still short of the highest standard for E1-9, which would require a clear assessment of the anticipated financial effects for all risks.

The “partial” rating is justified for three reasons:

1. **Quantification depth:** While climate risks and opportunities are described, the financial effect quantification appears limited to ranges and does not necessarily cover a complete set of quantified financial impacts for all material risks and opportunities.
2. **Link between risks and financial outcomes:** For full alignment, users typically expect clearer connections between identified risks (physical/transition) and specific financial statement impacts (where relevant), including time horizons and assumptions.
3. **Methodological transparency:** A full E1-9 disclosure is generally stronger when the report explains the method used to estimate financial effects, the scenario assumptions, and boundaries (e.g., whether effects relate to revenue, costs, asset impairment, CapEx/OpEx, or other financial indicators).

As a result, Research A marks E1-9 as “Partial.” The topic is covered and some aspects are provided, but the disclosure is not fully complete or fully quantified for anticipated financial effects at the DR level.

### **8.8.6 Interpretation and implications for Research A and Research B**

The results show that Enel’s reporting mostly supports ESRS E1 mapping at the core DR level. There is clear traceability for transition planning, policies, actions, targets, energy, and emissions. However, some areas remain challenging, such as how carbon credits and removals are presented in the ESRS format, and how anticipated financial effects are reported, since quantification and methods are often unclear.

These findings show that the checklist-based approach works well for Research A, as it clearly documents which disclosures are included and where to find them. For Research or Project B, this table can serve as a starting point for further analysis, such as focusing on specific datapoints like E1-1, E1-6, and E1-9, comparing with another company, or making the scoring rules more detailed to better measure disclosure completeness.

### 8.8.7 (Research A) conclusion

Research A created a solid basis for evaluating how companies' statements on climate issues under the EU sustainability reporting framework, with a focus on **ESRS E1 (Climate Change)**. The study used a structured content analysis of official ESRS legal texts and developed a practical checklist of climate disclosure requirements at the Disclosure Requirement level (E1-1 to E1-9) (European Commission , 2023) , (European Commission, 2024) , (European Commission, 2025).

One main result of Research A is a practical method for identifying, mapping, and evaluating climate disclosures in public corporate reports. This approach uses evidence mapping with section and page references, along with a simple completeness rating (Yes, Partial, or No) and an optional 0–1–2 score, to make the process clear and repeatable. The method was established through a case study using Enel Group's Integrated Annual Report 2024, which demonstrated that it is both practical and easy to understand.

The case study showed that Enel's reporting clearly covers most of the main ESRS E1 requirements. The assessment found clear disclosures for **E1-1 to E1-6, which include the transition plan, policies, actions and resources, targets, energy use and mix, and Scope 1–2–3 emissions**. However, some areas still lack complete or well-structured disclosures. **E1-7 (GHG removals and carbon credits)** and **E1-9 (anticipated financial effects of climate-related risks and opportunities)** were rated as **Partial**, meaning the information is there but not fully organized or detailed as required. **E1-8 (internal carbon pricing)** was rated as **Not found, since no clear** disclosure was identified using the evidence mapping approach.

These results show the benefits of using a structured checklist. Even if a report covers climate topics in detail, meeting ESRS requirements depends on how clear, traceable, and complete the disclosures are for each standard. Research A sets an evidence-based starting point and highlights common challenges in early ESRS alignment, like how to handle carbon credits and removals and how to measure expected financial effects.

Research A also provides a clear starting point for Research or Project B. The next phase can use the same report structure and method, so there is no need to start over. Research B could expand the assessment to specific datapoints, look more closely at E1-1, E1-6, and E1-9, include more companies for comparison, improve the scoring to measure completeness more precisely, and discuss disclosure gaps in light of new rules and changes. In this way, Research A serves as the basis for the final thesis, while Research B will add additional data and deeper analysis.

## 9 Linking Research A to the Final Project (Research B)

Research A established the regulatory and methodological foundation of this thesis by defining the CSRD/ESRS context and operationalising **ESRS E1 (Climate Change)** into a structured, traceable assessment approach. In particular, Research A developed a core checklist at the Disclosure Requirement level (E1-1 to E1-9), defined an evidence-mapping protocol (section/page traceability), and demonstrated feasibility through a first application on **Enel Group's 2024 Integrated Annual Report**.

The **Final Project** builds directly on the same framework and does not restart the work. Instead, it extends Research A in two ways: (1) by moving from a single-company demonstration to a **multi-company comparative analysis**, and (2) by producing consolidated results (tables, scores, and cross-company insights) using the same ESRS E1 checklist logic. This ensures full continuity between the two phases: the regulatory background, definitions, checklist structure, and coding rules remain unchanged, while the empirical scope is expanded.

### 9.1 Comparative Design (How the Companies Are Connected and Compared)

To ensure that the comparison is meaningful and consistent, companies are connected through a common selection logic and a standardized assessment procedure.

#### 9.1.1 Common selection logic (why these companies are comparable)

All companies included in the **Final Project** are selected as **large European listed utilities** (one per country) and are therefore expected to be within the scope of CSRD/ESRS-based sustainability reporting. They operate in the utilities/energy transition domain and are exposed to similar climate-related disclosure themes (transition planning, energy mix, GHG emissions, climate risks, and targets). This creates a coherent comparative sample while maintaining diversity across national contexts.

#### 9.1.2 Standardized assessment tool (same checklist for everyone)

Each company is assessed using the **same ESRS E1 core checklist (E1-1 to E1-9)** developed in Research A. For every disclosure requirement, evidence is mapped to an exact location in the report (section/page), and disclosure completeness is classified consistently using the same rule:

- **Yes (2)** = clearly disclosed and traceable
- **Partial (1)** = addressed but incomplete/unclear or not fully structured
- **No (0)** = not identified in the reviewed report

Because the same checklist, coding definitions, and traceability rules are applied across all companies, results are directly comparable.

### 9.1.3 Evidence mapping ensures “fair comparison.”

A key part of comparability is traceability. Therefore, no company is scored “Yes” for any ESRS E1 item unless the disclosure can be located precisely (page/section). If a disclosure is referenced elsewhere in the report (“incorporation by reference”), the evidence is recorded where the information is actually disclosed. This avoids subjective judgments and ensures that the comparison is based on verifiable evidence.

### 9.1.4 Cross-company outputs (what will be compared)

Using the standardized scoring table, the **Final Project** will compare companies through:

1. **Total ESRS E1 disclosure completeness score** per company (sum of E1-1 to E1-9 scores)
2. **Item-level comparison.**
3. **Common gaps and patterns**, typically expected in complex areas such as E1-7 (credits/removals), E1-8 (internal carbon pricing), and E1-9 (anticipated financial effects)

Results will be presented through a comparative table (company × E1 items) and simple charts (e.g., total score by company, average score by E1 item). The discussion will interpret differences in disclosure structure and completeness while keeping the analysis focused on reporting compliance and traceability.

## 10 Companies selected to conduct the study for the Final Project

The initial goal of this study was to select the largest publicly listed utility company from each EU country to conduct a broad comparison across the EU under the ESRS E1 (Climate Change) framework. However, during the implementation phase, expanding the analysis to all EU Member States required significant time and effort because it involved collecting, screening, and evidence-mapping multiple large corporate reports consistently.

Therefore, to ensure feasibility and maintain methodological consistency, the Final Project uses a focused comparative sample. Building on the Enel Group case study developed in Research A, four additional large European utility companies were chosen to create a five-company sample suitable for a structured ESRS E1 core comparison.

*Table 2 Final Project sample: selected utility companies and country*

#	Company	Country
1	Enel Group	Italy
2	ENGIE	France
3	Iberdrola	Spain
4	E.ON	Germany
5	Ørsted	Denmark

The detailed company-by-company assessment is presented in the following sections, using the same **ESRS E1 core checklist (E1-1 to E1-9)** and the same evidence-mapping approach to ensure traceability and comparability across all companies.

## 10.1 ENGIE (France): ESRS E1 core assessment

### 10.1.1 Company profile

ENGIE is a major European energy group operating across energy generation, renewable energy development, energy infrastructure, and energy services. As a large, listed utility with a material exposure to climate transition themes, ENGIE is expected to disclose structured information regarding transition planning, climate governance, targets, emissions performance (Scopes 1–3), and climate risks and opportunities. ENGIE publishes dedicated ESG material and integrated reporting documents that provide a suitable basis for an ESRS E1 (Climate Change) disclosure assessment (ENGIE, 2024).

### 10.1.2 Documents reviewed (two-step review)

To keep the assessment consistent with the Research A approach and to ensure traceability, the following public documents were reviewed in the order below:

1. **Primary document:** “ESG at ENGIE 2024” (main governance + targets + metrics source) (ENGIE, 2024).
2. **Supporting document:** ENGIE Integrated Report (RI Version EN) (strategic narrative and risk context) (ENGIE, 2024).

This two-document approach is acceptable for the Final Project because ENGIE’s ESRS-relevant content is distributed across summary ESG reporting and integrated reporting materials.

### 10.1.3 Method applied (core ESRS E1 checklist)

The analysis uses the same core method defined in Research A: a structured content analysis based on the **ESRS E1 core checklist (E1-1 to E1-9)**. For each disclosure requirement (DR), the assessment checks:

- whether the disclosure is present in the reviewed document set,
- whether it is traceable to specific pages/sections, and
- whether it appears complete at the DR level.

A simple classification is used:

- **Yes (Score 2):** clearly disclosed and traceable.
- **Partial (Score 1):** addressed but incomplete, unclear, or not structured as a full ESRS block.
- **No (Score 0):** not identified in the reviewed document set.

Evidence mapping is documented using the PDF page numbers cited below.

## 10.1.4 Results: ESRS E1 core checklist findings (ENGIE)

As a summary, ENGIE provides strong evidence for the core ESRS E1 requirements related to **transition plan framing, governance/policies, actions, targets, and Scope-based emissions**. The less mature areas (at core level) are those that often require deeper standardised structuring and quantification: **energy consumption/mix (E1-5)** in the provided document set, **carbon credits/removals (E1-7)** as a fully structured block and **anticipated financial effects (E1-9)** in a consolidated quantified form.

Table 3 ENGIE (France) — ESRS E1 Core Checklist (Evidence-mapped)

<b>ENGIE (France) — ESRS E1 Core Checklist (Evidence-mapped)</b>						
<b>Scoring:</b> 0 = No evidence found, 1 = Partial, 2 = Yes (clear + traceable).						
<b>Evidence pages:</b> PDF page numbers.						
ESRS E1 DR	Core requirement	Evidence location (ENGIE docs)	Status	Score	Short quote summary (≤25 words)	Notes
E1-1	Transition plan for climate change mitigation	ESG at ENGIE 2024, p.17	Yes	2	“Transition plan / pathway assessment and alignment discussion.”	Clear transition-plan framing and assessment content.
E1-2	Policies for mitigation and adaptation	ESG at ENGIE 2024, p.14	Yes	2	“Climate policy governance roles and responsibilities described.”	Policy governance is traceable and structured.
E1-3	Actions and resources (implementation)	ESG at ENGIE 2024, p.14	Yes	2	“Actions/implementation logic linked to governance and investment control.”	Strong linkage to implementation controls.
E1-4	Targets (mitigation/adaptation)	ESG at ENGIE 2024, p.9	Yes	2	“Climate targets/objectives presented in a structured table.”	Targets clearly presented (core level).
E1-5	Energy consumption and mix	Integrated Report (RI), section on portfolio/renewables (no dedicated E1-5 block in provided set)	Partial	1	“Energy/portfolio information discussed but not as a clear E1-5 disclosure block.”	Not presented as a clear E1-5 block in the provided ENGIE files.
E1-6	Scope 1–2–3 and total GHG emissions + method	ESG at ENGIE 2024, p.27	Yes	2	“Total Scope 1–2–3 table and breakdowns provided.”	Strong, traceable emissions disclosure.
E1-7	Removals + carbon credits	ESG at ENGIE 2024, p.33	Partial	1	“Carbon credit/offset-related content referenced.”	Mentioned, but not structured as a full ESRS E1-7 disclosure block.
E1-8	Internal carbon pricing	ESG at ENGIE 2024, p.14	Yes	2	“Carbon price scenarios defined for decision-making.”	Good evidence for E1-8 at core level.
E1-9	Anticipated financial effects + climate risks/opportunities	Integrated Report (RI), risk/opportunity discussion (no single consolidated quantified ‘financial effects’ block in provided set)	Partial	1	“Climate risks/opportunities discussed; financial effects not consolidated/fully quantified.”	Typical weakness: limited consolidated quantification of anticipated financial effects.
				<b>15</b>		

**Below is the DR-level assessment with traceable evidence:**

***10.1.4.1 E1-1 Transition plan for climate change mitigation — YES (2)***

ENGIE provides framing of the transition plan and an assessment of the transition pathway in the ESG document. The evidence supports that ENGIE communicates transition ambition and transition credibility signals (e.g., external evaluation references), which is sufficient for a DR-level “Yes.”

**Evidence:** ESG at ENGIE 2024, **p.17**.

***10.1.4.2 E1-2 Policies related to climate change mitigation and adaptation — YES (2)***

ENGIE discloses governance responsibilities for defining and steering climate policy. This supports E1-2 at core level because climate policy existence and responsibility lines are explicit and traceable.

**Evidence:** ESG at ENGIE 2024, **p.14** (“Defines climate policy” and governance responsibility framing).

***10.1.4.3 E1-3 Actions and resources in relation to climate policies — YES (2)***

ENGIE links implementation to organisational controls (e.g., investment governance and budget-type mechanisms) and describes how climate execution is managed. While Research A does not require full CapEx/OpEx extraction, the presence of an actions-and-implementation description is sufficient for a DR-level “Yes.”

**Evidence:** ESG at ENGIE 2024, **p.14** (implementation framing, operationalisation and governance controls).

***10.1.4.4 E1-4 Targets related to climate change mitigation and adaptation — YES (2)***

ENGIE provides a structured presentation of climate targets/objectives, enabling traceability and confirming that targets exist at the core disclosure level (including target framing for 2030 and longer-term trajectories).

**Evidence:** ESG at ENGIE 2024, **p.9** (targets/objectives table).

***10.1.4.5 E1-5 Energy consumption and mix — PARTIAL (1)***

Within the provided ENGIE document set, energy/portfolio information is mainly discussed through operational and strategic portfolio framing (renewables capacity, transition direction), but the disclosure is not presented as a clearly structured ESRS E1-5 “energy consumption and mix” block, as seen for Enel. Therefore, the evidence supports “Partial” rather than “Yes.”

**Evidence:** Integrated Report (RI Version EN), portfolio/transition discussion sections (energy framing present, but not a dedicated E1-5 block in the provided files).

#### ***10.1.4.6 E1-6 Gross Scope 1, Scope 2, Scope 3 and total GHG emissions — YES (2)***

ENGIE provides a clear disclosure of emissions at Scope level, including a “TOTAL SCOPE 1, 2 and 3” table and breakdown. This is a strong indicator of disclosure maturity and supports a “Yes.”

**Evidence:** ESG at ENGIE 2024, **p.27** (Scope 1/2/3 totals + breakdown).

#### ***10.1.4.7 E1-7 GHG removals and carbon credits — PARTIAL (1)***

The ESG document contains references to offset/carbon-credit related elements, but the information is not presented as a fully structured E1-7 disclosure block with the same clarity as emissions or targets. Therefore, E1-7 is recorded as “Partial”.

**Evidence:** ESG at ENGIE 2024, **p.33** (carbon credit/offset-related references).

#### ***10.1.4.8 E1-8 Internal carbon pricing — YES (2)***

ENGIE provides clear evidence of internal use of carbon price scenarios for decision-making, which meets the core requirement for E1-8 at DR level. Therefore, E1-8 is recorded as “Yes”.

**Evidence:** ESG at ENGIE 2024, **p.14** (“Defines carbon price scenarios”).

#### ***10.1.4.9 E1-9 Anticipated financial effects from material climate risks and opportunities — PARTIAL (1)***

ENGIE’s reporting discusses climate transition context and risk framing, but the provided documents do not present a single consolidated, clearly quantified “anticipated financial effects” disclosure block comparable to the strict ESRS E1-9 intent. Therefore, E1-9 is recorded as “Partial.”

**Evidence:** Integrated Report (RI Version EN), risk/strategy narrative (climate risk and opportunity framing without consolidated quantified E1-9 block in the provided set).

### **10.1.5 Discussion (ENGIE): interpretation and comparability**

#### ***10.1.5.1 Strength areas***

ENGIE demonstrates strong disclosure maturity in areas that typically define minimum climate transparency for large utilities: **targets (E1-4)** and **Scope-based emissions reporting (E1-6)**. These disclosures are central for cross-company comparison because they are measurable, commonly reported, and traceable. ENGIE also provides clear governance signals in **E1-2** and implementation framing in **E1-3**, supporting the interpretation that climate topics are treated as strategic and operational issues rather than purely narrative commitments.

#### ***10.1.5.2 Why E1-5 is rated Partial (and what it means)***

E1-5 often requires a more “accounting-like” presentation of energy consumption and energy mix. In the specific ENGIE files provided here, energy and portfolio information are discussed, but not presented as a clean ESRS-style E1-5 block with consumption/mix tables comparable to Enel. The “Partial” rating, therefore, does not imply ENGIE lacks energy data; it reflects the

evidence-based rule of this thesis: we only rate “Yes” when the disclosure is clear and traceable as an E1-5-style disclosure in the reviewed document set.

#### ***10.1.5.3 Why E1-7 and E1-9 are partial (typical “hard” requirements)***

The result pattern is consistent with common ESRS implementation challenges:

- **E1-7** requires a structured treatment of carbon credits/removals; companies often reference credits but do not present them as a full, structured disclosure block.
- **E1-9** requires linking climate risks/opportunities to anticipated financial impacts; this is frequently less quantified or less consolidated than emissions and targets.

These items are therefore useful discriminators in the Final Project comparative analysis, as they highlight disclosure maturity beyond basic emissions reporting.

#### **10.1.6 Mini conclusion (ENGIE)**

ENGIE’s reporting provides strong ESRS E1 core disclosure coverage for transition plan framing (E1-1), policies and governance (E1-2), actions/resources (E1-3), climate targets (E1-4), and Scope-based emissions reporting (E1-6). Internal carbon pricing evidence is also clear (E1-8). The main limitations at the core DR level in the provided ENGIE document set relate to energy consumption/mix structured disclosure (E1-5), carbon credits/removals as a fully structured block (E1-7), and consolidated quantified anticipated financial effects (E1-9), which are recorded as partial under the evidence-based approach.

## 10.2 Iberdrola (Spain): ESRS E1 core assessment

### 10.2.1 Company Profile

Iberdrola, S.A. is a major European electric utility with a business model strongly centred on **electrical networks and renewable energy**, and it positions itself as a global leader in both. The company highlights long-term investment in renewable energy as a strategic pillar of its business model and presents itself as a benchmark in electrical networks and renewable energy (Iberdrola, 2024).

For the purpose of this thesis (Final Project), Iberdrola is included as a representative **large European listed utility**, where climate topics are expected to be material and where the sustainability reporting system provides sufficient public documentation for assessing ESRS E1 (Climate Change) disclosures.

### 10.2.2 Documents reviewed (public sources)

The core source document used for the assessment is Iberdrola's **Consolidated Non-Financial Information Statement (NFIS) / Sustainability Report for FY2024** (Iberdrola, 2024). This report is suitable for the present analysis because it contains structured sustainability disclosures and includes climate-related content covering emissions, targets, and risk management.

### 10.2.3 Method applied (core-only, comparable across companies)

The same method described in Research A was used here: a structured content analysis utilizing the ESRS E1 core checklist (E1-1 to E1-9). Each disclosure requirement was evaluated based on:

1. whether disclosure exists in the report,
2. whether it is traceable to specific report pages/sections, and
3. whether it appears complete at the Disclosure Requirement (DR) level.

Each item is marked **Yes / Partial / No**, with an optional score of 2 / 1 / 0 to support cross-company comparison in the Final Project.

## 10.2.4 Results: ESRS E1 core checklist findings (Iberdrola 2024)

Overall, Iberdrola’s FY2024 Sustainability Report provides strong coverage of ESRS E1 core topics. The report contains explicit climate-related disclosures on transition planning, climate policies, actions, targets, energy, and GHG emissions (Scopes 1–3). The assessment suggests that most core E1 items are present and can be traced.

Table 4 Iberdrola (Spain) - ESRS E1 Core Checklist (Evidence-mapped)

<b>Iberdrola (Spain) - ESRS E1 Core Checklist (Evidence-mapped)</b>						
<b>Scoring:</b> 0 = No evidence found, 1 = Partial, 2 = Yes (clear + traceable).						
<b>Evidence pages:</b> PDF page numbers.						
ESRS E1 DR	Core requirement	Evidence location (Iberdrola report)	Status	Score	Short quote summary	Notes
E1-1	Transition plan for climate change mitigation	ESRS table of contents shows E1-1 → SNFI p.71	Yes	2	“E1-1 Transition plan... mapped in ESRS contents.”	Use the E1-1 section on SNFI p.71 as main evidence.
E1-2	Policies for mitigation and adaptation	ESRS table of contents shows E1-2 → SNFI p.86	Yes	2	“E1-2 Policies... mapped in ESRS contents.”	Policies are explicitly mapped as E1-2.
E1-3	Actions and resources (implementation)	ESRS table of contents shows E1-3 → SNFI p.88	Yes	2	“E1-3 Actions and resources... mapped in ESRS contents.”	Actions/resources are explicitly mapped as E1-3.
E1-4	Targets (mitigation/adaptation)	ESRS table of contents shows E1-4 → SNFI p.91	Yes	2	“E1-4 Targets... mapped in ESRS contents.”	Targets section exists and is clearly mapped.
E1-5	Energy consumption and mix	ESRS table of contents shows E1-5 → SNFI p.97	Yes	2	“E1-5 Energy consumption and mix... mapped.”	Energy consumption/mix is explicitly mapped.
E1-6	Scope 1–2–3 and total GHG emissions + method	ESRS table of contents shows E1-6 → SNFI p.98	Yes	2	“E1-6 Scope 1/2/3 and total GHG... mapped.”	Emissions are explicitly mapped to E1-6.
E1-7	Removals + carbon credits	ESRS table of contents shows E1-7 → SNFI p.105	Yes	2	“E1-7 removals and mitigation projects via credits... mapped.”	Treat as “Yes” at core DR level; details checked in that section.
E1-8	Internal carbon pricing	ESRS table of contents shows E1-8 → SNFI p.105	Yes	2	“E1-8 internal carbon pricing... mapped.”	Mark Yes at core level; confirm content in the mapped page.
E1-9	Anticipated financial effects + climate risks/opportunities	No “Disclosure Requirement [E1-9]” is mapped in ESRS contents	Partial	1	“Climate IRO content exists, but E1-9 DR not mapped as a block.”	Record as Partial: risks/opportunities are typically covered, but no explicit E1-9 DR block is shown in the ESRS mapping.
				<b>17</b>		

**Below is the DR-level assessment:**

***10.2.4.1 E1-1 Transition plan (Yes).***

The report includes a clear transition-planning disclosure (transition plan framing, climate objectives, and pathway). This supports the interpretation that the company provides a documented approach to climate transition planning and mitigation strategy.

***10.2.4.2 E1-2 Policies (Yes).***

Climate-related policies (mitigation and adaptation) are disclosed and incorporated into climate governance and management structures.

***10.2.4.3 E1-3 Actions and resources (Yes).***

The report describes climate actions and implementation logic, supporting the presence of the “actions/resources” requirement at the core level.

***10.2.4.4 E1-4 Targets (Yes).***

Climate targets (including decarbonisation objectives and target framing) are disclosed. The target content is sufficiently present for the DR-level checklist.

***10.2.4.5 E1-5 Energy consumption and mix (Yes).***

The report provides energy-related disclosures, consistent with the E1-5 topic.

***10.2.4.6 E1-6 GHG emissions (Scopes 1–2–3) (Yes).***

The report includes explicit Scope reporting references and emissions-related disclosure content. The existence of Scope 1, Scope 2, and Scope 3 reporting indicates strong alignment with the E1-6 requirement at the core level.

***10.2.4.7 E1-7 Removals and carbon credits (Yes).***

The report includes references to carbon credits and voluntary carbon market elements. This supports marking E1-7 as present at a DR level.

***10.2.4.8 E1-8 Internal carbon pricing (Yes).***

The report includes internal carbon pricing content and explicitly refers to an internal “shadow price” approach (internal carbon pricing system). This supports a “Yes” rating at the core level.

***10.2.4.9 E1-9 Anticipated financial effects (Partial).***

The report includes climate impacts/risks/opportunities management content, but the anticipated financial effects are not presented as a clearly structured, comprehensive quantified E1-9 disclosure block in the same way as other E1 items. Therefore, the evidence supports a **Partial** rating.

## 10.2.5 Discussion (what the results mean and why it matters)

### *10.2.5.1 Strength areas (why Iberdrola scores high on E1 core)*

At a core level, Iberdrola’s disclosures seem strong in areas that are typically most visible and easy to measure for utilities: transition planning, energy mix, and emissions metrics. The inclusion of Scope-based emissions reporting (Scopes 1–3) is especially important because it shows awareness across the value chain and is often a major challenge for companies in other sectors.

In addition, the presence of an internal carbon pricing disclosure (shadow pricing) is a positive indicator of decision-useful climate governance, as it suggests the company considers carbon cost signals in decision-making.

### *10.2.5.2 Why E1-9 is “Partial” (typical weakness across many firms)*

E1-9 is frequently one of the most challenging ESRS E1 requirements, because it is not just about describing risks and opportunities, but also about providing decision-useful information on **anticipated financial effects** (where relevant). In practice, companies often discuss climate risks, climate governance, and scenario planning but provide limited quantified financial impacts or present them outside a clear E1-9 structure.

In Iberdrola’s report, climate risk/opportunity content is present, but the structure and quantification of anticipated financial effects is not as explicit and consolidated as other E1 disclosure areas (e.g., emissions, targets, energy). For this reason, Iberdrola is rated **Partial** for E1-9 in the core checklist.

### *10.2.5.3 Implication for cross-company comparison*

This pattern is useful for the Final Project comparison because it creates a meaningful “stress test” item: in many companies, **E1-7, E1-8, and especially E1-9** differentiate stronger vs weaker disclosure maturity. By keeping the same checklist and evidence rules across all companies, Iberdrola’s relative strengths and weaknesses can be fairly compared with those of other large utilities, such as Engie.

## 10.2.6 Mini conclusion for Iberdrola

The Iberdrola FY2024 Sustainability Report demonstrates strong ESRS E1 core disclosure coverage across transition planning, policies, actions, targets, energy, and Scope-based emissions. Carbon credits and internal carbon pricing are also addressed, which strengthens the climate governance picture. The primary area that remains comparatively less structured at core level is E1-9 (anticipated financial effects), which is assessed as partial due to limited consolidated quantification and/or less explicit E1-9 presentation. Overall, Iberdrola provides a high-quality basis for cross-company ESRS E1 comparison in the Final Project.

## 10.3 E.ON (Germany): ESRS E1 core assessment

### 10.3.1 Company Profile

E.ON is a large European utility group with a business model focused on energy networks and customer solutions. As a listed utility operating in a highly regulated energy transition environment, climate-related topics are material to E.ON's strategy and operations. These topics include decarbonisation pathways, emissions management across operational and value-chain boundaries, and climate-related risks and opportunities that can affect infrastructure planning and investment decisions. E.ON publishes an Integrated Annual Report and additional sustainability reporting material, which together provide a suitable basis for an ESRS E1 (Climate Change) core disclosure assessment. Integrated annual report (E.ON, 2025) and Sustainability report (E.ON, 2025).

### 10.3.2 Documents reviewed (searched in the required order)

To ensure traceability and consistency with Research A, the ESRS E1 assessment for E.ON was performed using a two-step document review:

1. **Primary document (searched first):** *E.ON Integrated Annual Report* (main source for evidence mapping) (European Commission, 2024) (E.ON, 2025).
2. **Supporting document (searched after finishing the primary report):** *E.ON Sustainability Factbook 2025* (used only to confirm or complement information already searched in the integrated report) (E.ON, 2025).

This order is important because the Final Project applies the evidence-based rule that the primary annual/integrated report should be the first reference point, with the factbook used only as supporting material.

### 10.3.3 Method applied (same as Research A, core checklist only)

The analysis uses the same core method defined in Research A: a structured content analysis based on the **ESRS E1 core checklist (E1-1 to E1-9)**. For each disclosure requirement (DR), the assessment checks:

- whether the disclosure is present in the reviewed document set,
- whether it is traceable to specific pages/sections, and
- whether it appears complete at the DR level.

A simple classification is used:

- **Yes (Score 2):** clearly disclosed and traceable.
- **Partial (Score 1):** addressed but incomplete, unclear, or not structured as a full ESRS block.
- **No (Score 0):** not identified in the reviewed document set.

Evidence mapping is documented using the PDF page numbers cited below.

### 10.3.4 Results (E.ON): ESRS E1 core checklist, evidence-mapped

In summary, E.ON demonstrates strong ESRS E1 core coverage for most climate disclosure requirements. The Integrated Annual Report clearly includes climate strategy, targets, energy information, Scope-based emissions disclosures, and internal carbon pricing. The only core item rated as Partial is E1-9 (anticipated financial effects), where the report states that non-reporting or omission is due to phase-in rules rather than providing a consolidated, quantified financial effects section.

Table 5 E.ON (Germany) - ESRS E1 Core Checklist (Evidence-mapped)

<b>E.ON (Germany) - ESRS E1 Core Checklist (Evidence-mapped)</b>						
<b>Scoring:</b> 0 = No evidence found, 1 = Partial, 2 = Yes (clear + traceable).						
<b>Evidence pages:</b> PDF page numbers.						
ESRS E1 DR	Core requirement	Evidence location (E.ON docs)	Status	Score	Short quote summary	Notes
E1-1	Transition plan for climate change mitigation	Integrated Annual Report, p.92–93	Yes	2	“Climate Protection... decarbonization strategy and pathway to climate neutrality.”	Clear transition pathway described.
E1-2	Policies for mitigation and adaptation	Integrated Annual Report, p.94	Yes	2	“Climate Protection Policies... policy statement and governance framing.”	Policy governance is traceable.
E1-3	Actions and resources (implementation)	Integrated Annual Report, p.95–100	Yes	2	“Reducing Scope 1/2/3 emissions... actions and operational measures described.”	Actions are linked to targets/emissions drivers.
E1-4	Targets (mitigation/adaptation)	Integrated Annual Report, p.97	Yes	2	“Climate Protection Targets... long-term and 2030 targets (Scope-based).”	Targets clearly stated.
E1-5	Energy consumption and mix	Integrated Annual Report, p.101	Yes	2	“Energy Consumption and Mix... total MWh and renewables share.”	Clear E1-5-style section exists.
E1-6	Scope 1–2–3 and total GHG emissions + method	Integrated Annual Report, p.99–100	Yes	2	“Scope 1/2/3 values + location/market-based method notes.”	Strong emissions disclosure.
E1-7	Removals + carbon credits	Integrated Annual Report, p.101–102	Yes	2	“Carbon Credits... voluntary credits; notes on removals/CA.”	Clear carbon credits disclosure exists.
E1-8	Internal carbon pricing	Integrated Annual Report, p.102	Yes	2	“Internal carbon pricing (ICP) described and why used.”	Explicit ICP disclosure.
E1-9	Anticipated financial effects + climate risks/opportunities	Integrated Annual Report, p.134	Partial	1	“E1-9: no reporting... use of Phase-In regulation.”	The report explicitly explains omission (phase-in).
				<b>17</b>		

**Below is the DR-level assessment:**

***10.3.4.1 E1-1 Transition plan for climate change mitigation — YES (2)***

E.ON's Integrated Annual Report presents a structured climate protection and decarbonisation strategy that describes the company's transition direction and long-term pathway. This satisfies the core E1-1 intent because it demonstrates that the company has a transition approach and communicates how it intends to progress toward climate objectives.

**Evidence:** Integrated Annual Report, **p.92–93** (climate protection/decarbonisation strategy framing and transition pathway).

***10.3.4.2 E1-2 Policies related to climate change mitigation and adaptation — YES (2)***

The report presents climate protection policies in a clear policy framing, supporting a “Yes” rating at DR level. The disclosure provides traceability of policy logic and corporate framing of climate governance and policy.

**Evidence:** Integrated Annual Report, **p.94** (climate protection policies).

***10.3.4.3 E1-3 Actions and resources in relation to climate policies — YES (2)***

E.ON describes actions and measures aimed at reducing emissions and implementing the decarbonisation agenda. These actions are linked to operational and value-chain emission reduction and therefore meet the core intent of E1-3. While Research A/Final Project core scope does not require full investment breakdown, E.ON's disclosure is sufficient to confirm existence and direction of actions.

**Evidence:** Integrated Annual Report, **p.95–100** (actions and measures to reduce emissions across Scopes and operational initiatives).

***10.3.4.4 E1-4 Targets related to climate change mitigation and adaptation — YES (2)***

The report discloses climate protection targets in a traceable section. The disclosure supports the existence of targets and allows the Final Project to map and compare targets across companies at core level.

**Evidence:** Integrated Annual Report, **p.97** (climate protection targets).

***10.3.4.5 E1-5 Energy consumption and mix — YES (2)***

E.ON provides a dedicated section on energy consumption and mix with quantitative framing. This supports a “Yes” rating, as the company discloses energy consumption-related information in a traceable location consistent with E1-5 intent.

**Evidence:** Integrated Annual Report, **p.101** (energy consumption and mix).

***10.3.4.6 E1-6 Gross Scope 1, Scope 2, Scope 3 and total GHG emissions — YES (2)***

E.ON discloses Scope-based emissions with values and methodological framing. This is a key strength for ESRS E1, especially because Scope 3 emissions often represent a major challenge

in data collection for many companies. The report includes methodological notes that enhance the usefulness and traceability of the disclosure.

**Evidence:** Integrated Annual Report, **p.99–100** (Scope 1/2/3 values and method notes, including location/market-based context where relevant).

Support confirmation (secondary source): the Sustainability Factbook provides additional consolidated context for sustainability metrics and targets.

#### ***10.3.4.7 E1-7 GHG removals and carbon credits — YES (2)***

The report includes a dedicated disclosure on carbon credits, supporting the E1-7 core requirement that carbon credits/removals (where relevant) should be disclosed.

**Evidence:** Integrated Annual Report, **p.101–102** (carbon credits disclosure and related narrative).

#### ***10.3.4.8 E1-8 Internal carbon pricing — YES (2)***

E.ON explicitly discloses internal carbon pricing, describing the presence and purpose of an internal carbon price mechanism. This is a differentiating disclosure item in cross-company comparison, as many utilities do not explicitly disclose internal carbon pricing or only mention regulatory carbon markets.

**Evidence:** Integrated Annual Report, **p.102** (internal carbon pricing).

#### ***10.3.4.9 E1-9 Anticipated financial effects from material climate-related risks and opportunities — PARTIAL (1)***

In the Integrated Annual Report, E1-9 is not presented as a consolidated, quantified disclosure block of anticipated financial effects. Instead, the ESRS index indicates that E1-9 is not reported due to phase-in provisions, meaning the omission is explicitly acknowledged rather than silently missing. Under the evidence-based approach used in this thesis, this supports a **Partial** rating: the report addresses the item through an explicit “not reported due to phase-in” statement but does not provide the full anticipated financial effects disclosure content.

**Evidence:** Integrated Annual Report, **p.134** (ESRS index statement for E1-9 and phase-in explanation).

### **10.3.5 Discussion (E.ON): interpretation and relevance for cross-company comparison**

#### ***10.3.5.1 Strengths in E1 disclosure structure***

E.ON performs strongly across the most fundamental ESRS E1 disclosure areas: transition plan framing, climate policies, actions and implementation, targets, energy consumption/mix, and Scope-based emissions. These are the core components that typically enable comparison across utilities. In particular, the presence of Scope-based disclosure and the inclusion of methodological framing support transparency and facilitate comparability.

E.ON provides explicit disclosure for E1-7 (carbon credits) and E1-8 (internal carbon pricing). These are often differentiating items in cross-company comparisons because:

- some companies disclose carbon credits only in narrative form or under “other information,” and
- Internal carbon pricing is not consistently disclosed across utilities.

#### ***10.3.5.2 Why E1-9 remains difficult (and why “Partial” is reasonable)***

E1-9 is frequently among the most challenging requirements because it requires undertakings to link climate risks/opportunities to anticipated financial impacts in a structured way. Many companies provide climate risk narratives but do not consolidate quantified financial effects into a single disclosure block. In E.ON’s case, the report explicitly references phase-in provisions, which explains the absence of full disclosure. For the Final Project, this is valuable because it highlights a common pattern: early ESRS reporting may provide strong “core operational” disclosures while postponing the more complex quantification of financial effects.

#### **10.3.6 Mini conclusion (E.ON)**

E.ON’s Integrated Annual Report demonstrates strong ESRS E1 core disclosure coverage for E1-1 through E1-8, including clear disclosures on transition direction, policies, actions, targets, energy consumption/mix, Scope-based emissions, carbon credits, and internal carbon pricing. The main limitation is E1-9, where anticipated financial effects are not provided as a consolidated quantified block and are instead explicitly linked to phase-in provisions; therefore, E1-9 is recorded as partial at the core level.

## 10.4 Ørsted (Denmark): ESRS E1 core assessment

### 10.4.1 Company Profile

Ørsted is a major European energy company with a strategic focus on renewable energy and energy transition. Given its business exposure to climate-related risks and transition dynamics, climate disclosures are expected to be material and well-developed in its public reporting. Ørsted's Annual Report 2024 includes a sustainability statements section designed to align disclosures with ESRS requirements, which makes it suitable for a structured ESRS E1 assessment (Ørsted, 2024).

### 10.4.2 Document reviewed

The ESRS E1 assessment was conducted using **Ørsted Annual Report 2024**, focusing on the "Sustainability statements | Environment" section. Ørsted also provides an internal ESRS mapping table that identifies where each ESRS E1 disclosure requirement is located within the report, supporting traceability (Ørsted, 2024).

### 10.4.3 Method applied (core-only, comparable across companies)

The analysis uses the same core method defined in Research A: a structured content analysis based on the **ESRS E1 core checklist (E1-1 to E1-9)**. For each disclosure requirement (DR), the assessment checks:

- whether the disclosure is present in the reviewed document set,
- whether it is traceable to specific pages/sections, and
- whether it appears complete at the DR level.

A simple classification is used:

- **Yes (Score 2):** clearly disclosed and traceable.
- **Partial (Score 1):** addressed but incomplete, unclear, or not structured as a full ESRS block.
- **No (Score 0):** not identified in the reviewed document set.

Evidence mapping is documented using the PDF page numbers cited below.

## 10.4.4 Results (ESRS E1 core checklist — evidence mapped)

The ESRS E1 core checklist (E1-1 to E1-9) was applied using the same approach as previous evidence mapping to page/section, followed by a Yes/Partial/No decision and an optional 2/1/0 score.

Table 6 Ørsted (Denmark) - ESRS E1 Core Checklist (Evidence-mapped)

<b>Ørsted (Denmark) - ESRS E1 Core Checklist (Evidence-mapped)</b>						
<b>Scoring:</b> 0 = No evidence found, 1 = Partial, 2 = Yes (clear + traceable).						
<b>Evidence pages:</b> PDF page numbers.						
ESRS E1 DR	Core requirement	Evidence location (Ørsted Annual Report 2024)	Status	Score	Short quote summary (≤25 words)	Notes
E1-1	Transition plan for climate change mitigation	p.83–85	Yes	2	“Transition plan... business model already transformed from fossil-based.”	Clear E1-1 coverage and narrative structure.
E1-2	Policies for mitigation and adaptation	p.88	Yes	2	“Policies related to climate change mitigation and adaptation.”	Explicit ESRS-linked policy disclosure.
E1-3	Actions and resources (implementation)	p.88–90	Yes	2	“Actions and resources in relation to climate change policies.”	Strong action/implementation description.
E1-4	Targets (mitigation/adaptation)	p.91–92	Yes	2	“SBTi and entity-specific climate targets table.”	Targets are clearly disclosed and traceable.
E1-5	Energy consumption and mix	p.93 (and narrative also p.102)	Yes	2	“Energy consumption... tables for non-renewable sources and mix.”	Clean E1-5 table evidence.
E1-6	Scope 1–2–3 and total GHG emissions + method	p.94–95	Yes	2	“Gross scope 1, 2, 3 and total GHG emissions tables.”	Strong ESRS-aligned emissions disclosure.
E1-7	Removals + carbon credits	p.90	Partial	1	“Carbon credits... additionality and climate action quality.”	Credits mentioned; not presented as a full dedicated E1-7 structured block.
E1-8	Internal carbon pricing	Not found (keywords: internal carbon price / carbon pricing / shadow price)	No	0	—	No explicit E1-8 disclosure identified in the report.
E1-9	Anticipated financial effects + climate risks/opportunities	p.82–88 (climate IROs and resilience discussion)	Partial	1	“Climate IROs and resilience described; no consolidated quantified financial effects.”	Risks/opportunities present; anticipated financial effects not fully consolidated/quantified.
				<b>14</b>		

**Below is the DR-level assessment:**

#### ***10.4.4.1 Strong coverage (Yes) — E1-1 to E1-6***

Ørsted provides clear and traceable coverage for the core climate disclosure blocks that are typically most measurable and structured in utility reporting:

- **E1-1 Transition plan: YES** — disclosed and traceable (p.83–85).
- **E1-2 Policies: YES** — policies are explicitly presented (p.88).
- **E1-3 Actions and resources: YES** — actions and resources are discussed in a structured manner (p.88–90).
- **E1-4 Targets: YES** — targets are presented clearly, including target tables (p.91–92).
- **E1-5 Energy consumption and mix: YES** — energy consumption tables are present (p.93), with supporting narrative later in the section (p.102).
- **E1-6 Scope-based emissions: YES** — Scope 1, Scope 2, Scope 3, and total GHG emissions are disclosed in tables (p.94–95).

This indicates strong ESRS E1 alignment for the core operational climate disclosures, particularly for targets, energy, and emissions.

#### ***10.4.4.2 Weaker coverage (Partial/No) — E1-7 to E1-9***

Three items differentiate Ørsted’s disclosure maturity in the same way observed across many companies:

- **E1-7 (removals and carbon credits): PARTIAL** — the report references carbon credits and discusses their quality (e.g., additionality), but it is not presented as a fully structured E1-7 disclosure block comparable in clarity to emissions/targets tables. Evidence is traceable on p.90.
- **E1-8 (internal carbon pricing): NO (not found)** — no explicit disclosure of internal carbon pricing (or shadow price) was identified in the reviewed report using targeted keyword checks. Therefore, it is recorded as “not disclosed/not found” in the evidence-based approach.
- **E1-9 (anticipated financial effects): PARTIAL** — Ørsted discloses climate-related impacts/risks/opportunities and resilience-related discussion (p.82–88), but the anticipated financial effects are not presented as a consolidated, clearly quantified disclosure block. Therefore, E1-9 is recorded as partial for comparability with the other companies.

#### **10.4.5 Discussion (why these results matter in the Final Project comparison)**

Ørsted performs very strongly on the “core measurable” climate disclosure items: targets, energy, and Scope-based emissions are presented in structured tables with clear traceability (E1-4, E1-5, E1-6). This is valuable for cross-company comparison because these items typically drive the clearest differences in reporting completeness and transparency.

The weaker items align with common ESRS implementation challenges:

- **E1-7** is often less consistently structured across companies, and carbon credits/removals are sometimes discussed in narrative form rather than presented as a dedicated ESRS block.
- **E1-8** often differs significantly between companies because some utilities use internal carbon pricing and disclose it clearly, while others do not disclose it or do not use it.
- **E1-9** is frequently among the hardest requirements because it requires stronger linkage between climate risks/opportunities and financial outcomes; many firms discuss risks qualitatively but do not provide consolidated quantified effects.

These patterns make Ørsted a strong comparator in the Final Project: it provides very strong “core” E1 disclosures and highlights the typical differences in E1-7/E1-8/E1-9 across the sample.

#### **10.4.6 Mini conclusion (Ørsted)**

Ørsted’s Annual Report 2024 provides strong ESRS E1 core disclosure coverage for E1-1 to E1-6, with clear evidence mapping for transition plan, policies, actions, targets, energy consumption/mix, and Scope 1–2–3 emissions. Carbon credits content is present but less structured as a full E1-7 block (partial), internal carbon pricing is not disclosed/not found (E1-8), and anticipated financial effects remain partial due to limited consolidated quantification (E1-9).

## 10.5 Comparison between companies

### 10.5.1 Basis of comparison

This comparison is based on the **ESRS E1 core checklist (E1-1 to E1-9)** applied consistently across all selected companies, using the same evidence-mapping rule (page/section traceability) and the same scoring logic: **Yes = 2, Partial = 1, No = 0**. The objective is to compare **disclosure completeness and traceability**, not climate performance.

### 10.5.2 Overall ranking (core E1 completeness)

Using the ESRS E1 core checklist scoring system (0 = No evidence found, 1 = Partial, 2 = Yes), the total disclosure completeness scores for the five utilities are:

- **Iberdrola (Spain): 17 / 18**
- **E.ON (Germany): 17 / 18**
- **ENGIE (France): 15 / 18**
- **Enel Group (Italy): 14 / 18**
- **Ørsted (Denmark): 14 / 18**

At a core level, all companies show strong coverage for the “baseline” requirements **E1-1 to E1-6**, with the main differentiation driven by the three items that are typically more variable across companies:

- **E1-5 (Energy consumption and mix):** ENGIE is the only company rated **Partial (1)**, while all others are **Yes (2)**.
- **E1-7 (Removals + carbon credits):** Iberdrola and E.ON score **2**, while Enel, ENGIE, and Ørsted score **1**, reflecting less structured or less complete disclosure in these cases.
- **E1-8 (Internal carbon pricing):** Iberdrola, ENGIE, and E.ON disclose internal carbon pricing (**2**), while Enel and Ørsted show **no evidence found (0)**, making E1-8 the strongest single driver of score differences.
- **E1-9 (Anticipated financial effects):** all companies score **Partial (1)**, confirming that this is the most challenging requirement to disclose in a consolidated and fully quantified way across the sample.

Overall, the ranking indicates that the highest-scoring companies (Iberdrola and E.ON) combine strong performance on the core operational disclosures with explicit evidence for internal carbon pricing and more structured carbon-credit/removals disclosure, while the lower scores mainly reflect gaps in E1-8 and partial structuring in E1-7 and/or E1-5.

Table 7 below summarises the **ESRS E1 core checklist scores** (0 = No evidence found, 1 = Partial, 2 = Yes) for the five selected utilities. It provides a compact comparison of disclosure completeness across E1-1 to E1-9 and highlights where differences between companies are driven by the more variable requirements (especially E1-7, E1-8, and E1-9).

Table 7 SUMMARY table - ESRS E1 Core Checklist for the five selected companies

SUMMARY- ESRS E1 Core Checklist						
Scoring: 0 = No evidence found, 1 = Partial, 2 = Yes (clear + traceable).						
ESRS E1 DR	Core requirement	Enel Group (Italy)	ENGIE (France)	Iberdrola (Spain)	E.ON (Germany)	Ørsted (Denmark)
E1-1	Transition plan for climate change mitigation	2	2	2	2	2
E1-2	Policies for mitigation and adaptation	2	2	2	2	2
E1-3	Actions and resources (implementation)	2	2	2	2	2
E1-4	Targets (mitigation/adaptation)	2	2	2	2	2
E1-5	Energy consumption and mix	2	1	2	2	2
E1-6	Scope 1-2-3 and total GHG emissions + method	2	2	2	2	2
E1-7	Removals + carbon credits	1	1	2	2	1
E1-8	Internal carbon pricing	0	2	2	2	0
E1-9	Anticipated financial effects + climate risks/opportunities	1	1	1	1	1
		14	15	17	17	14

### 10.5.3 Item-level comparison: what is consistently strong.

A strong pattern across all five companies is clear coverage of the “core operational” disclosures:

- **E1-1 to E1-4** (transition plan, policies, actions/resources, and targets) are generally well covered because utilities typically disclose decarbonisation strategy, governance, and targets as central parts of their sustainability communication.
- **E1-6 (Scope 1/2/3 emissions)** is consistently among the strongest disclosures because utilities tend to have established GHG accounting practices and structured reporting on emissions.

These items tend to be “high maturity” and therefore generate fewer differences between companies.

### 10.5.4 Main differentiators: E1-7, E1-8, E1-9

The main differences across companies are explained by three disclosure areas:

- **E1-7 (GHG removals and carbon credits)**

This item often appears in reports, but the structure varies. Some companies disclose credits as “other information” or in narrative form rather than as a clearly structured E1-7 disclosure block, which affects traceability and scoring. This is consistent with the variation observed in the company sections.

- **(2) E1-8 (Internal carbon pricing)**

E1-8 clearly distinguishes companies: some disclose internal carbon pricing explicitly, while others do not (or it is not traceable in the reviewed report). This impacts the total score and comparability.

- **(3) E1-9 (Anticipated financial effects)**

E1-9 is the most difficult disclosure requirement because it demands linking climate risks and opportunities to decision-useful financial impacts. Companies often share risk narratives, but quantification and consolidated “financial effects” sections are less common. In some cases, the report clearly states non-reporting due to phase-in provisions; in this study, such cases are recorded as **Partial** because the topic is addressed through an explicit omission statement rather than full quantified disclosure.

### 10.5.5 Cross-company conclusion of the comparison

In conclusion, the five utilities generally demonstrate strong ESRS E1 core disclosure coverage, especially for transition planning, targets, and emissions reporting. The main improvement opportunities and key sources of variability among companies are: (i) clearer and more structured treatment of credits/removals (E1-7), (ii) explicit disclosure of internal carbon pricing where applicable (E1-8), and (iii) more consolidated and quantitative reporting of expected financial impacts (E1-9). These are therefore the most important focus areas for enhancing ESRS E1 comparability.

# 11 Recommendations

## 11.1 Recommendations for companies (improving ESRS E1 reporting quality)

Based on the evidence-mapped results and the observed cross-company patterns, the following recommendations would improve ESRS E1 disclosure quality and comparability:

- 1. Improve traceability and structure (consistent ESRS blocks)**  
Companies should present climate disclosures using clear, ESRS-aligned headings and indexing so users can quickly locate E1-1 to E1-9 content. This improves auditability and comparability.
- 2. Clarify carbon credits/removals (E1-7) as a structured disclosure**  
When credits/removals are used, companies should clearly explain their role relative to direct emissions reductions and disclose them consistently and in a dedicated section rather than dispersing the content across narrative sections.
- 3. Be explicit about internal carbon pricing (E1-8)**  
If internal carbon pricing is used, companies should disclose the approach (internal fee vs. shadow price), purpose (investment appraisal, planning, risk management), and governance. If it is not used, an explicit “not applied” statement improves comparability.
- 4. Strengthen E1-9 (anticipated financial effects)**  
Where climate impacts are material, companies should increase clarity on how risks/opportunities translate into financial outcomes, including assumptions and time horizons. Where reporting is postponed due to phase-in provisions, the report should clearly document what is omitted and when it will be provided.
- 5. Explain phase-in and transitional decisions clearly**  
Where disclosures are omitted under phase-in rules, companies should explicitly state the basis and planned timeline for full disclosure, to reduce uncertainty for users and improve year-to-year comparability.

## 11.2 Recommendations for future research (how to extend this thesis)

Future work could strengthen the analysis by:

- expanding the sample (more countries/companies),
- moving from DR-level comparison to selected datapoint-level analysis (e.g., focusing deeply on E1-6 and E1-9), and
- adding a second-year comparison to evaluate improvements as ESRS implementation matures.

## 12 Conclusion

This thesis examined how large European utility companies disclose climate-related information under the CSRD/ESRS framework, focusing on **ESRS E1 (Climate Change)**. Research A established the regulatory context, operationalised ESRS E1 into a core checklist (E1-1 to E1-9), and demonstrated the method through an evidence-mapped case study of Enel Group.

The Final Project extended the same method to a structured comparison across five large European utilities (Enel, ENGIE, Iberdrola, E.ON, and Ørsted). The comparative analysis confirms that these companies generally provide strong coverage of the core operational ESRS E1 disclosure areas, particularly transition planning, targets, and Scope-based emissions reporting. At the same time, the analysis highlights that the most difficult and differentiating disclosure areas across the sample are **E1-7 (credits/removals)**, **E1-8 (internal carbon pricing)**, and **E1-9 (anticipated financial effects)**, where reporting is often less structured, less explicit, or less quantified.

Overall, the study shows that a checklist-based, evidence-mapped approach is effective for assessing ESRS E1 disclosure completeness and traceability using publicly available reports. The framework developed in this thesis is replicable and can be expanded in future work by increasing the sample size and moving toward deeper datapoint-level verification for the most complex disclosure requirements.

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