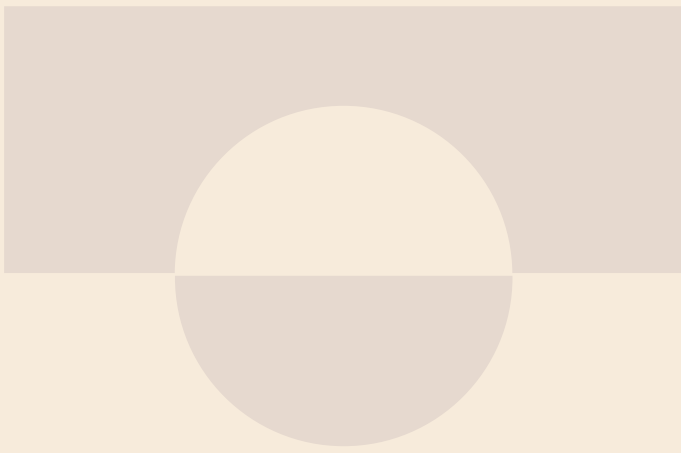


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ethical leadership
a new frontier for design



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Ethical Leadership: A New Frontier for Design

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DESIGN, SUSTAINABILITY REPORTING AND DATA-DRIVEN DASHBOARDS.

Communicating data as a strategic leadership tool through design

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ABSTRACT | As companies come under greater pressure to show that they are serious about ESG principles, being able to present clear, accessible, and engaging data on sustainability has become increasingly important, thus providing stakeholders with the data they need to evaluate corporate responsibility and sustainability practices. These reports are a factor affecting a company's access to finance, as investors and other stakeholders are increasingly making decisions based on sustainability; they enhance comprehension and retention of complex sustainability data, making information more accessible to a wide audience. It amplifies such benefits by giving a more active and dynamic insights view in real time on the dashboards' ability to permit access and interaction of stakeholders dynamically with sustainability data included within complex data sets and transforming it into very easy, nice-to-consume forms. This enhances the engagement of a user not only in understanding it better but also in creating opportunities to make more accurate decisions with in-depth analytics of data. Furthermore, impressive use of visual variables in a sustainability report not only enhances aesthetic appeal but also serves as a commanding tool in the management of impressions. By deploying enhanced visualization techniques, a firm communicates powerful narratives related to its core sustainability initiatives in shaping stakeholder perceptions and leveraging brand reputation. All these reports, however, inherently have varying levels of effectiveness, and at this juncture comes clarity—the art of communicating complicated data in a manner that can be understood—where data storytelling techniques play a crucial role. This is a practice to be undertaken with care. Ensuring the visual representations match the actual performance in sustainability will help avoid 'greenwashing', whereby organisations may seem to be exaggerating their

efforts in sustainability. Appreciating this precedent, the paper explores how the dual roles of sustainability reporting and data visualization designs support a brand in being more responsible through better stakeholder comprehension and trust. Examples will be provided by the analysis of case studies with leading energy companies, such as Enel and Eni, on how firms are facing up to the challenges relating to transparency and accountability through the use of data visualization. They discover how design has become a major leading strategy for modern organizations in pursuit of better articulation of their commitment to sustainability, preparing stakeholders to make informed decisions with data as the backbone, and giving form to the complexities of today's sustainability landscape with design.

KEYWORDS | INFORMATION VISUALIZATION; DATA-DRIVEN DASHBOARDS; SUSTAINABILITY REPORTING; DATA-DECISION MAKING

1. Introduction

In the context of Big Data and increased scrutiny over corporate responsibility, sustainability reporting has come to mean much more than a list of environmental and social metrics. Digital platforms represent today the tool on which judgments about organizational commitment to ESG are based by all kinds of stakeholders, from investors and policy-makers to NGOs and the general public. The volume, complexity, and real-time nature of ESG data can either illuminate or obscure genuine progress, depending on how effectively information is gathered, interpreted, and presented. The challenge for companies is to leverage interactive dashboards, UX design, and thoughtful information architecture in order to engender public trust, engage visitors in substantive analysis, and reduce the risk of "greenwashing" (Gelmini, 2017; Šimunović, 2024). Eni and Enel, two leading energy corporations based in Italy, provide illuminating case studies of how design-driven dashboards can shape or reshape public discourse around sustainability. Both companies operate in a sector that is central to global climate challenges, and both have declared significant commitments to greener operations, yet they must consistently demonstrate verifiable progress to maintain credibility (García-Sánchez et al., 2019). They have risen to this challenge by building online platforms—"Eni for" and "Beyond Reporting"—aimed at making ESG metrics more engaging and interactive. While both platforms pursue similar goals, they differ dramatically in design philosophy, data visualization style, narrative choices, and levels of methodological disclosure.

This paper discusses how information design, interaction design, user engagement strategies, and team structures come together in shaping user perceptions of Eni and Enel's sustainability initiatives. Drawing on observational data, analysis of published materials, and interviews with designers, product managers, and sustainability professionals, this research places the dashboards within a broader theoretical context that deals with trust-building, impression management, and ethical design choices. These comparative insights lead to a proposed design framework that considers best practices, which can be applied across industries in the pursuit of clarity and credibility for digital sustainability reporting. This paper seeks to outline a more holistic approach to designing sustainability dashboards with deeper reflections on interface architecture, user agency, brand narratives, and cultural norms in an effort to create robust, transparent, and engaging communications.

2. Theoretical Framework

2.1 Information Design and the Construction of Credibility in Digital Media

If anything, information design conventionally underlined the use of clarity, conciseness, and coherence principles in visually presenting complex data. Within digital media, these core principles converge with elements of perceived credibility and user trust.

Typographic consistency, informed colour decisions, and harmony in layouts create an aura of credibility in work related to visual cognition and human-computer interaction well before a user will start digging deeply for data evidence to support the contention. Conversely, design inconsistencies (e.g., misaligned labels, crowded charts, and a lack of consistent colour) may inadvertently sow doubts about the truthfulness of the information depicted (Tong 2023). While in sustainability contexts, organizational dashboards embed not only numerical figures but also narratives around corporate values, long-term strategies, and accountability structures. For data to inform public discourse, it has to be both accurate and meaningfully framed. Information design thus becomes the vector for weaving these contextual layers around quantitative metrics, connecting sustainability performance to broader social, economic, and ethical concerns. This process rhymes with what Tufte insisted upon—the "quality, relevance, and integrity of the content" (Tufte, 2001)—as data integrity. An organization's capability to engender trust, therefore, partially relies on the congruence of its design decisions with verifiable substance in its sustainability claims.

In respect to information design for trust-building, especially around data visualization, a set of factors encourages perceived credibility within the audience (Smith et al., 2022). Colour schemes, typography, and layout significantly shape users' willingness to trust the information they encounter (Jones et al., 2021). Visual aesthetics can enhance perceived data quality, as users often associate cohesive, well-structured visuals with higher informational integrity (Brown et al., 2023). Consistent design patterns and familiar metaphors encourage more intuitive navigation of complex datasets, fostering a greater sense of reliability (Lemon et al., 2020). Similarly, whitespace and clear hierarchies play the role of reducing clutter and making visual narratives more digestible Marques et al. (2021). Even further, the presence of transparency and accessibility enhances the level of trust in visualizations. Users are likely to find data credible when access to metadata, methodological notes, and clear source citations can be made. Data-driven dashboards represent a paradigm shift from static PDF reports by enabling real-time or near-real-time data updates, interactive exploration, and dynamic visualization (Satpathy & Gavaskar, 2022). The significance of engagement in these systems extends well beyond initial user clicks. Trust is closely linked to user experience (UX) as well. Whereas a very intuitive, pretty platform inspires confidence, one with a befuddling interface undermines confidence—even when the information in it may be accurate. Santoso & Schrepp, 2019; Tong, 2023. Equally, in presentation, the designers have to balance sophistication, simplicity, and emotional resonance if they want their users to both feel informed and welcome. Kusuma et al., 2022. The principle of "progressive disclosure" constitutes one helpful guide in this respect. While broad coverage of sustainability metrics is highly desirable, very dense visualizations impede insight into the key facts that are being communicated (Ryu & Kim, 2019). Gradual exposure to deeper layers of data allows users to explore at their own pace, enhancing user engagement and user trust (Buono et al., 2020). Interactive elements in visualizations that allow user-driven inquiry further magnify understanding in a self-reinforcing circle between clarity of design and credibility of presentation (GONÇALVES, 2023).

2.2 Data-Driven Dashboards, User Engagement, and Attention

Management

Data-driven dashboards represent a paradigm shift from static PDF reports by allowing real-time or near-real-time data updates, interactive exploration, and dynamic visualization. According to Satpathy & Gavaskar (2022), the importance of engagement in these systems goes far beyond the first clicks that users make. It includes the depth and duration of user immersion, how thoroughly users comprehend the data, and whether they feel motivated to investigate more or share insights (O'Brien & Toms, 2008). In dashboards with accessible explanations, dynamic filtering, or scenario simulations, for example, users might develop a deeper sense of agency, leading to better insight into the base metrics (Blascheck et al., 2019). However, it is critical to be sensitive about the interaction between engagement and attention management. The use of gamification or other persuasive strategies in design can take advantage of cognitive biases and thus increase user interactions, potentially overshadowing critical discourse (Sakir, 2024). Genuine empowerment differs from superficial attention capture. A dashboard supporting critical thinking displays contradictory data against positive trends, enables comparisons, and points to less favourable metrics when necessary. According to Meqdadi et al. (2020), authenticity in the presentation of data on sustainability therefore is inseparable from the general aesthetic appeal of the entire platform. While dashboards present nice visuals, if they do not encourage critical engagement with the data, there is a risk that they may actually promote passive consumption of information rather than meaningful learning and action.

User engagement in sustainability communication is a multifaceted challenge and can be approached through strategic interaction design. Gamification, for instance, is one such element that has proved to motivate more active involvement in making sustainability goals enjoyable and rewarding according to Arceiz et al., 2022. Incorporating storytelling techniques, including narratives or case studies, makes issues more relatable and captures user attention (Ji & Darnall, 2020; Meqdadi et al., 2020). Providing immediate feedback to users about their actions—such as showing real-time energy consumption—reinforces positive behaviours and sustains ongoing participation (Orr & Jadhav, 2018; Cavicchi et al., 2022). The feature of social sharing, through features like achievements or community challenges, helps develop a collective sense of responsibility and further enhances user engagement (Santana & Gil, 2019; Agost & Vergara, 2020). Besides, it is important to develop critical thinking in users. Interfaces designed to encourage the user to investigate and question—allowing, for instance, the manipulation of variables in an interactive visualization—enable a deeper grasp of sustainability at a more personal level (Makhubele et al., 2021). Access to a variety of perspectives and sources of information empowers independent opinions and more informed decision-making processes. Irizar-Arrieta et al. (2018), Smith et al. (2020) Ethical considerations in attention design add another layer of complexity: while gamification can draw users in, designers must ensure they do not unintentionally promote superficial participation or distract from core sustainability objectives. Sakir (2024). Pravis' such as transparent communication of goals and possible consequences increase trust, as does inclusive interface design that caters for a variety of user needs (Yang et al., 2022; Akhtar, 2024). In general, considerate interaction design, real-time feedback, critical thinking features, and ethical attention strategies can, in combination, result in meaningful experiences that engage not just the users but also mobilize them towards concrete sustainability action.

2.3 Visual Impression Management, Transparency, and Greenwashing

Visuality management refers to organizational strategies of manipulation through design elements, such as charts, infographics, or framing narratives, to elicit desired emotional

and cognitive responses. In sustainability reporting, for example, color-coded progress bars might highlight positive trends while relegating disclaimers about methodological shortcomings to fine print. Not all of it is necessarily unethical; it may be a clear message to a larger audience. However, excessive aesthetic curation bears the risk of concealing relevant information and ultimately damaging user trust (Rodrigues & Franco, 2019). Authors point out that in the case of dashboards that present only selective successes or exclude unfavourable metrics, there is a heightened risk that such stakeholder communication may be perceived as deceitful (Šimunović, 2024). Greenwashing underlines the tension between appearance and reality within sustainability discourse. Corporations that tout ESG credentials without aligning them with verifiable metrics may suffer reputational harm and alienate stakeholders (García-Sánchez et al., 2019). Although external audits or adherence to frameworks like the GRI and TCFD can bolster legitimacy, these signals must reflect authentic performance rather than serve as mere window dressing. Designers play a vital role here in incorporating disclaimers and transparent data sources that temper scepticism while keeping visuals comprehensible. A balance between stylistic impact and verifiable reporting is key to maintaining public trust.

2.4 Digital Product Teams and the Role of Designers as Information

Mediators

The development of sustainability dashboards reflects wider changes in digital product development. Traditional reporting teams would often operate in siloed structures, where sustainability experts compiled the ESG metrics, which then needed to be formatted as static reports by communication specialists. In contrast, modern approaches integrate design, data science, sustainability management, and user research in agile feedback loops (McMahan et al., 2021). An integrated model allows for real-time adaptation of dashboards in response to new frameworks, changing user expectations, and the ever-changing ESG landscape. Designers' roles have grown to be much more than just aesthetically pleasing, now acting as an "information mediator." Designers team up with data scientists and subject matter experts to translate technical data into an engaging, user-friendly interface. They embed narratives or educational aids that could help general audiences understand complicated metrics and make sure navigation remains intuitive (Wiyanto 2016; McMahan et al. 2021). This role also involves reconciling brand identity with methodological integrity so that a desire to showcase positive achievements does not overshadow the need to present a balanced representation of organizational sustainability practices (Kunneman & Filho, 2020). User-informed iteration cycles allow them to be iteratively refined, incorporating user-centered principles with ethical considerations of reporting. Recent research has shown that these integrations of design, data science, and sustainability are not only improving the quality of the products but also foster much more responsible use of data. This collaborative mindset, which has permeated these evolving digital product teams, as expounded in detail by Yanran 2023 and Mulyani et al., 2020, reflects a greater shift toward seeing ESG communication not as some static, one-way flow of figures and claims but rather as a dynamic conversation.

3. Methodology

3.1 Research Design and Rationale

This qualitative comparative case study will seek to understand how design principles and interaction strategies shape trust in corporate sustainability dashboards. Eni and Enel are the two dominant players in the Italian energy sector, with well-publicized

sustainability ambitions, representing an ideal contrast in terms of data visualization, narrative integration, and user engagement. These cases will enable further interrogation of design's capacity to structure user perceptions of progress and accountability.

3.2 Data Collection

Data are collected in multistage. Publicly available documents were sourced, including annual and sustainability reports from 2019 to 2023 of each company under study, with the purpose of understanding how its messaging evolved, the extent to which data are disclosed, and what strategic goals have been declared. Direct dashboard analysis, "Eni for" and "Beyond Reporting," was performed multiple times on several devices and in different screen resolutions, capturing interface structures, interactions, visual designs, and text comments. This observation gave real anchor points for interviewing the interviewees on design decisions and the integration of user feedback.

Semi-structured interviews then followed, averaging an hour each, conducted with a total of fifteen professionals across both organizations. Participants included designers, product owners, sustainability managers, and UX researchers to account for diverse insights into design, data integrity, brand communication, and user-centric goals. Interviews were coded as transcripts using the method of Thematic Analysis on issues such as how data complexity was dealt with, how design was used to maintain or improve credibility and how the teams aimed to engage different user personas. Due to confidentiality agreements, it is not possible to directly cite the quotes by individual roles. However aggregated findings form the basis of comparative insights presented in this paper.

3.3 Evaluation Dimensions

The core analytical framework focuses on four dimensions in which similarities and discrepancies between Eni and Enel are tracked: information design, trust-building, engagement, and critical thinking. Information design here examines coherence, hierarchical structuring, and visual clarity; trust-building investigates the presence of transparency practices, methodological references, and external validation signals. Engagement assesses levels of interactivity, UX fluidity, emotional or narrative resonance, and user empowerment in data exploration. Critical thinking takes into account the way in which each platform supports or constrains comparative analyses, reveals uncertainties, and uses ethical design features that may facilitate or hinder objective interpretations.

This multilayered approach offers a balanced view of how each company's design decisions shape stakeholder perceptions. In triangulating the findings, the study accounts for potential distortions, such as the presence of brand-specific colour palettes, differences in user feedback channels, or the selective nature of interviewee experiences. Although the analysis reflects a specific temporal snapshot, these case-based observations highlight recurring design patterns, trade-offs, and best practices that can be generalized to other contexts where sustainability reporting seeks to earn public trust and encourage more informed engagement.

4. Comparison Cases

4.1 Eni's "Eni for"

The sustainability dashboard of Eni welcomes visitors with high-impact visuals strongly reflecting brand identity. Bold colour contrasts, often involving the company's signature yellow and black, punctuate the homepage with quick snapshots of strategic pillars, narratives describing transitions toward greener operations, and short success stories.

The initial impression is one of confidence and forward momentum, underlined by banners proclaiming reductions in emissions or expansions in renewable energy partnerships. [Figure 1]



Figure 1. Eni For – Landing Page

A deeper examination, reveals that Eni’s platform offers limited real-time manipulation of data within the dashboard itself. Interactive elements exist—such as hover-enabled tooltips for charts—but the platform tends to redirect users to external PDF reports or embedded links if they seek comprehensive data sets or detailed methodological explanations [Figure 2]. According to one of Eni’s design leads, this approach arose from the internal tension between providing immediate, highly distilled information to broad audiences and allowing deeper exploration for experts. The final result leans toward a streamlined experience, guiding casual visitors through summarized infographics, while leaving more specialized data analysis to downloadable documents.

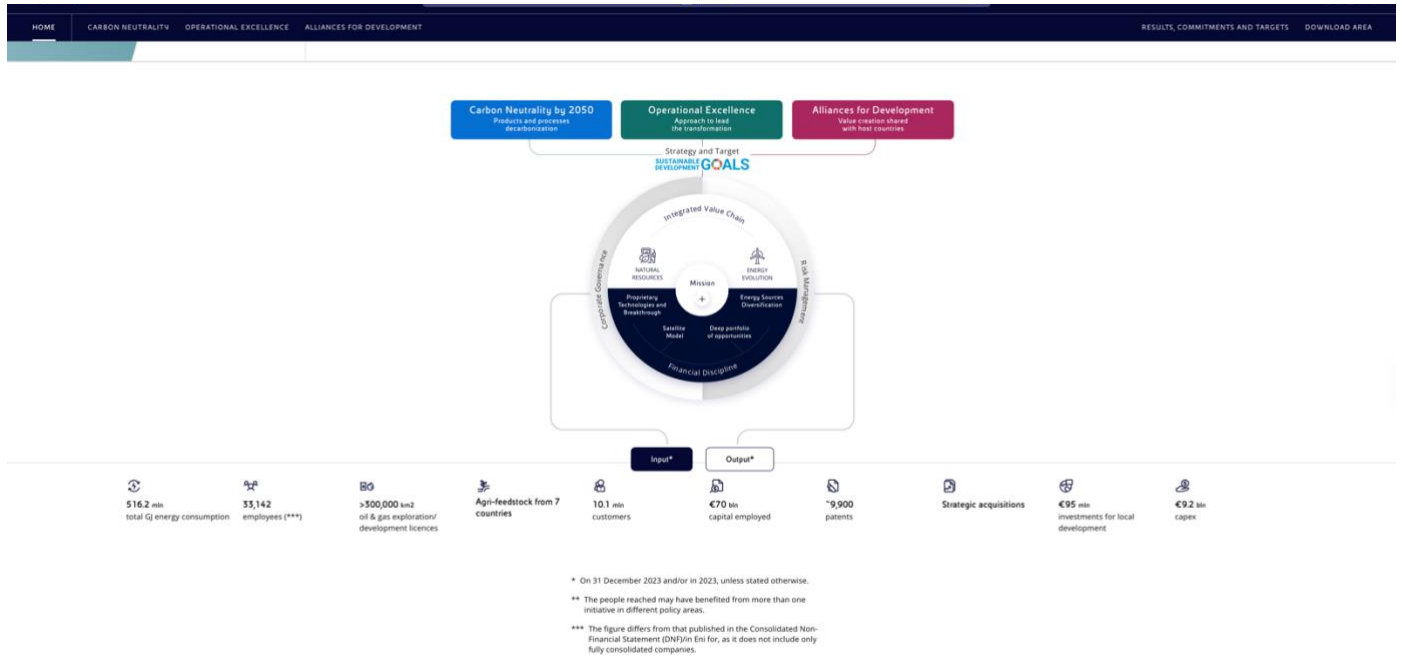


Figure 2. Eni For – Infographics of the Goals

The main positive here is that it keeps the website uncluttered and can communicate, rather quickly and visually, the major achievements by Eni. However, it also limits the possibility of immediate user-driven comparisons for different indicators or time spans. Looking from the trust viewpoint, the platform references recognized frameworks, usually in footnotes, and signals alignment to global standards like TCFD. These textual disclaimers suggest data are "verified" or "externally assured," but here the user would need to make an additional step in order either to access them or confirm it. This aspect of design, though readable from the perspective of pragmatic simplicity, can also lead to concerns the platform accentuates favourable data with much more strength than ambiguous data or challenging metrics [Figure 3].

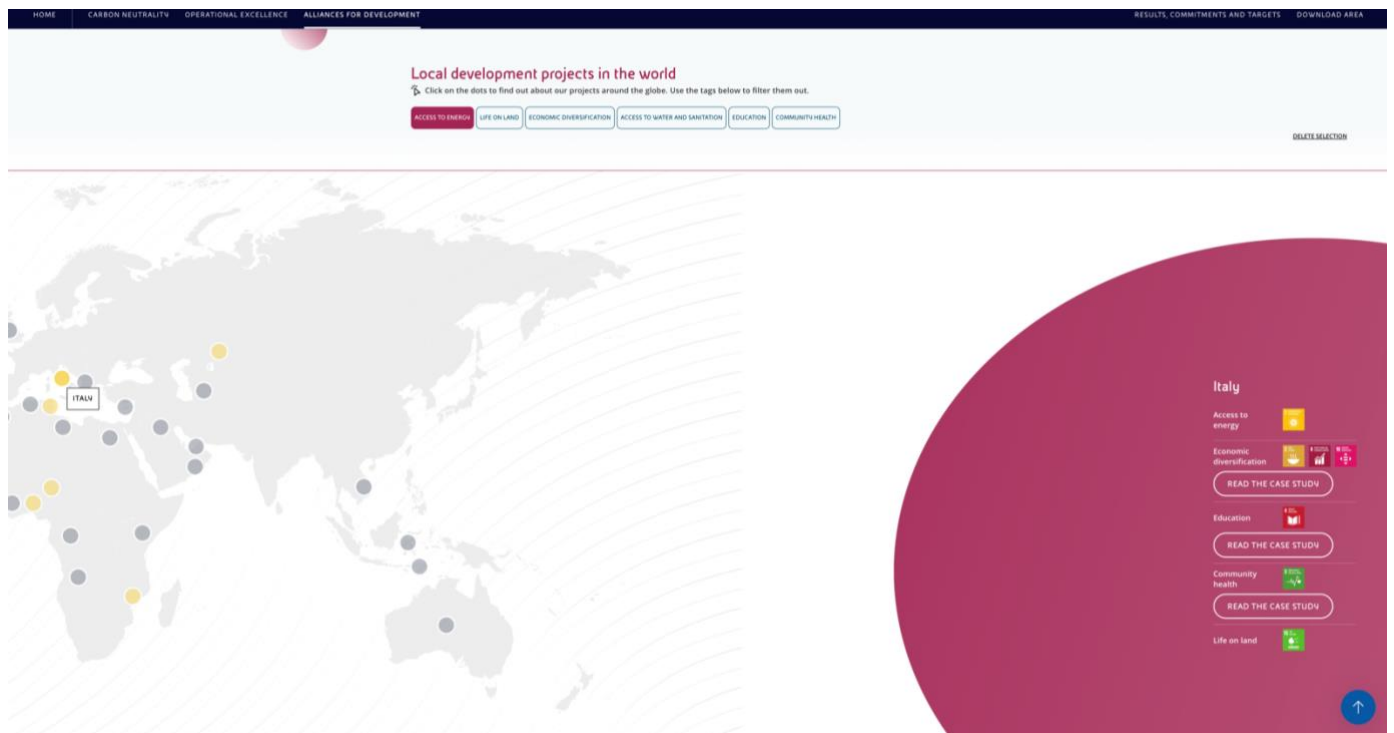


Figure 3. Eni For – Infographic Maps

According to these, they aim to keep positive milestones front and centre, viewing the website as a window into Eni’s evolving trajectory rather than a “raw data clearinghouse.” While the platform might embed disclaimers and references to partially met goals, it remains more celebratory than self-critical in tone. This characteristic can also raise scepticism in users, who might expect interactive dashboards to balance achievements and ongoing—perhaps underdeveloped—aspects of performance (Šimunović, 2024). Though the choice by Eni might be appropriate in a brand communication strategy, this underlines how complex the relationship between marketing imperatives and imperatives of transparency in reporting can be when one is designing a sustainability dashboard.

4.2 Enel’s “Beyond Reporting”

The “Beyond Reporting” platform of Enel runs with a cleaner and more minimalist aesthetic, using lighter background tones, expansive whitespace, and well-orchestrated typographic hierarchies. It was scrolling through the homepage by users with scarce narratives in measured sequences, referring to matters such as decarbonization, the circular economy, and social development initiatives. Each segment brings on a story with data visualizations responding to user inputs like year selections or geographic filters [Figure 4]. This approach points toward a more integrative perspective on data exploration—that is, guiding the user from an overarching narrative to specialized details without switching to separate reports



Figure 4. Enel Beyond Reporting – Landing Page

Methodological transparency in Enel often extends beyond the usage of short footnotes, locating data definitions, references to third-party audits, and alignment to recognized frameworks in side panels or collapsible sections within the main interface. This design choice helps to respond to user concerns with “where the numbers come from,”

alleviating the friction created by opening several PDFs. It frames the platform as an evolving, living repository rather than a promotional page.

Engagement strategies for Enel's users are based on scroll-telling, short animations, and interactive visualization of historical and current performances. One could follow how the renewable capacity of the company has grown over several years, embedded links explaining how that capacity is calculated, cross-referencing with greenhouse gas emission reductions. Their ambition was to go further in creating a deeper user connection by merging brand messaging with active learning tools through interviews.

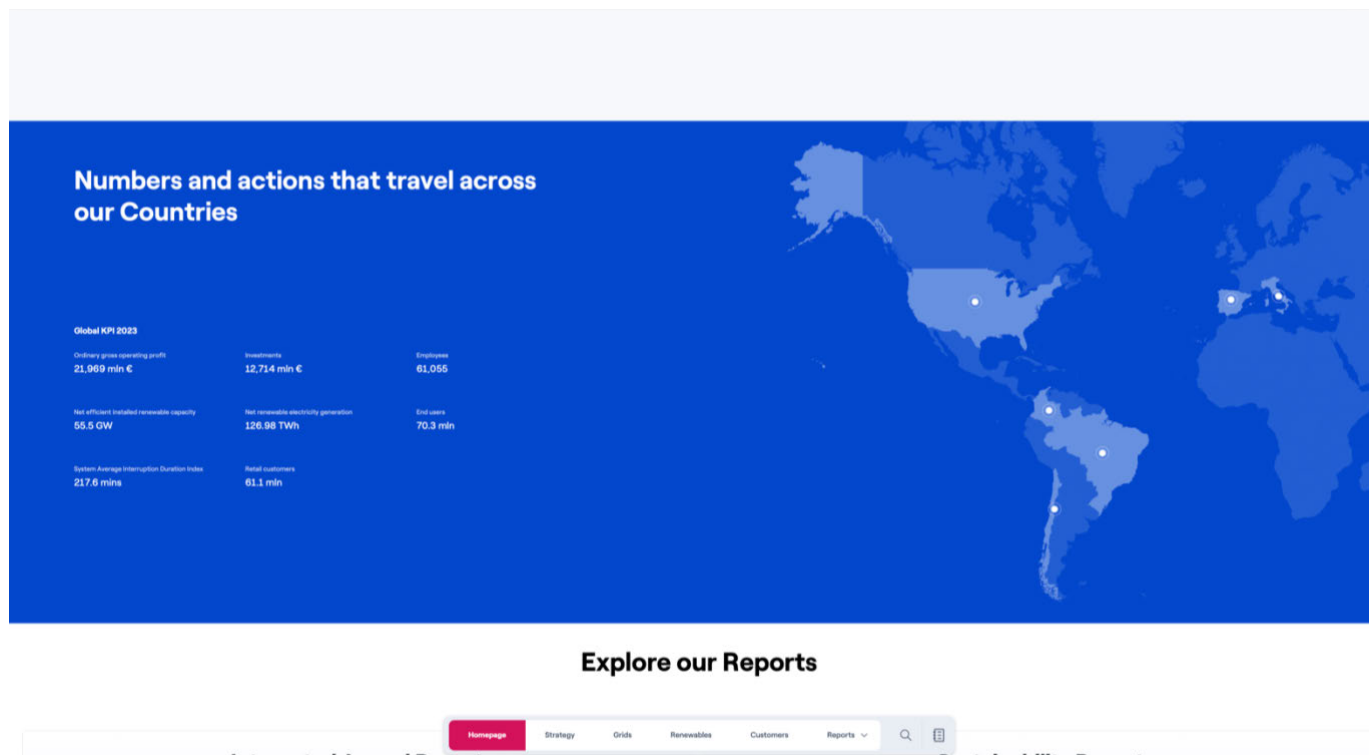


Figure 5. Enel Beyond Reporting – Infographic Maps

Although there are apparent strengths in the platform, a number of glaring criticisms regarding framing the narrative somewhat selectively do tarnish its result [Figure 6]. Indeed, although Enel does discuss some challenges, mainly setting these against the context of transition hurdles towards ambitious targets will probably soften some realities that will be delayed or missed. Yet, the presence of disclaimers and footnotes throughout the site reduces the risk that users view it as overtly promotional.

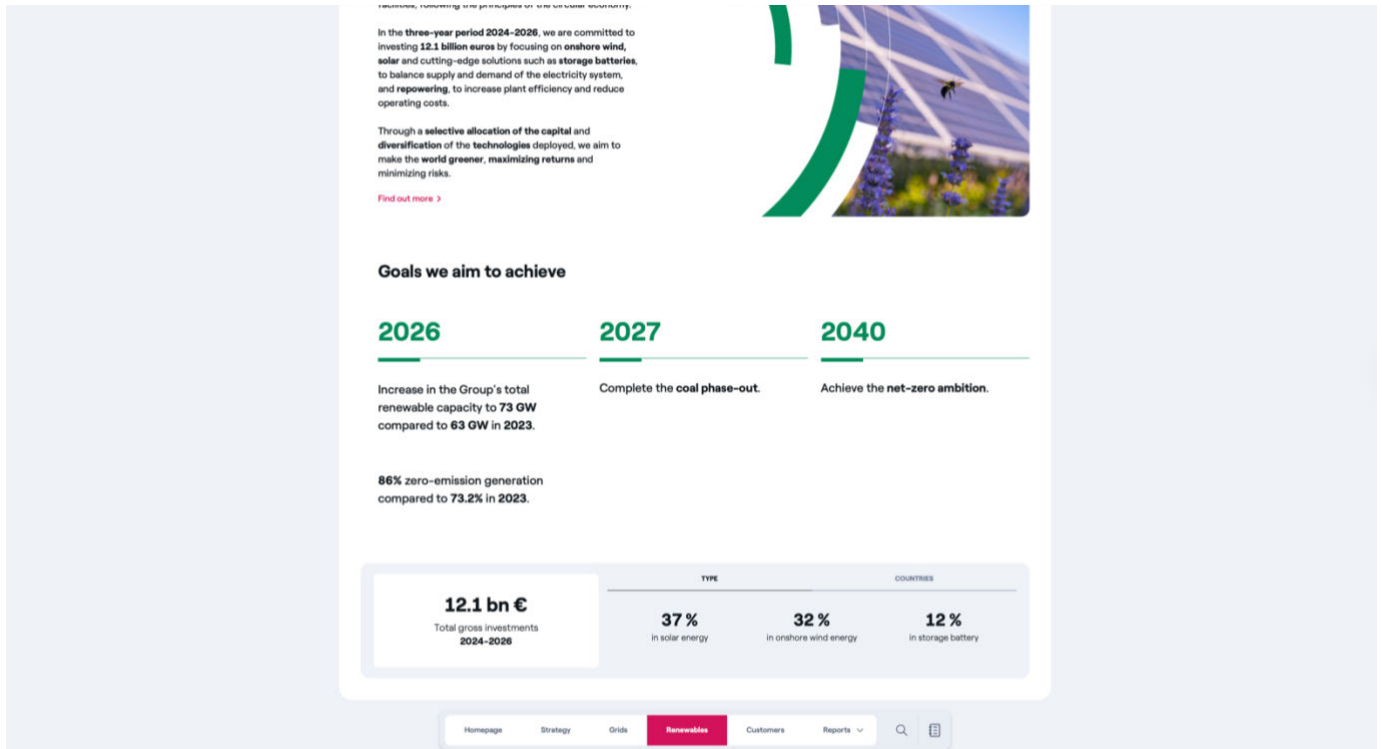


Figure 6. Enel Beyond Reporting – Some data reports

Feedback from the users through interviews and partial user testing data indicates that the investment professionals and policy analysts go for deeper explorations or downloading of data within the tool, while casual visitors remain at top-level narrative blocks or videos. This may hint at the dual nature of this website: professional scrutiny and general public outreach.

5. Discussion

5.1 Observed Commonalities and Divergences

Eni and Enel have a common strategic objective in using design-based storytelling and interactive visuals to build perceptions about their respective energy transitions. Both firms draw on colour theory, brand-specific iconography, and short narratives depicting either community projects or technological breakthroughs. Their reports denote commitments to known frameworks, and both dashboards refer to external validation or audited metrics. The key divergence is found in how each platform structures user exploration. Eni encourages a concise, aesthetically driven "first impression," relegating granular data to external PDF resources. Enel attempts to embed detail within the platform itself, enabling real-time data toggles and direct references to methodological clarity in-situ.

This duality reflects each company's internal decisions regarding what user segments to prioritize. The Eni website, on the other hand, encourages quick scanning and brand-based storytelling, probably better suited to the general audiences or potential partners who want an overview. Here, Enel's approach definitely better accommodated users who had an appetite for deeper data interrogation and ongoing updates, possibly offering a stronger bulwark against greenwashing suspicions. Neither approach is "wrong," but they represent different design philosophies about how to balance clarity with detail. They also

show how two organizations in the same sector can deploy design in divergent yet purposeful ways.

5.2 Tensions Between Marketing Aims and Ethical Transparency

One common tension was the conflict between marketing imperatives and the ethical imperative to be transparent with regard to the sharing of data. Respondents from Eni and Enel both agreed that top management would prefer underlining success, brand identity, and forward-looking statements, while domain experts or user researchers would propose deeper, even-handed coverage of achievements and setbacks. These tensions materialize in design decisions, such as how to position disclaimers or how to word textual explanations for partially met goals, among other design decisions (Rodrigues & Franco, 2019). In each case, design is not solely about visual aesthetics but about strategic trade-offs between brand messaging, user autonomy, and the moral imperative to present data honestly.

Therefore, the notion of "ethical design" in sustainability dashboards involves not only how well the user experiences the interface but also how the organization balances promotion with forthright disclosure. Greenwashing can thrive under conditions where marketing overshadows data accuracy or omits critical context (Gelmini, 2017). Accordingly, in mitigating such risks, Enel embedded references to external assurance, more interactive modules function as a possible safeguard by putting details and disclaimers within users' immediate paths. As Eni operates more through their external downloads, it may come under suspicion on the part of those who find hidden data dubious. Yet these perceptions will also depend on user motivations: an inquisitive stakeholder may accept Eni's system if they trust the externally assured documents, while a casual viewer might remain unaware of the deeper data behind the polished visuals.

5.3 Facilitating Critical Thinking Through Design

Designers interviewed at both firms voiced aspirations to guide users beyond mere acceptance of corporate narratives toward active questioning. They made reference to the use of progressive disclosure: making simple visuals, for example, but then displaying richer layers for a click or hover, letting different user groups find their comfort zone (Buono et al., 2020). Still, they express a need toward standard frameworks indicating anomalies or estimates, which themselves support stakeholders with posing critical questions. However, in practice, these platforms go differently. Eni speaks about deeper metrics only after it bounces the user to a PDF, potentially breaking the interactive flow. In Enel's in-dashboard disclaimers and toggling direct data foster a more continuous learning experience, though not all visitors will choose to avail themselves of those resources.

Building critical thinking capacities requires transparency over data derivation. Both speak about their auditing processes, but presence and accessibility diverge. Overcoming user skepticism often relies on how swiftly and clearly a platform can address questions about where numbers come from or how they are validated (Šimunović, 2024). Visual explanations, side panels specifying the source of each metric, or short videos featuring sustainability experts can reinforce user confidence while underscoring the complexity of ESG measurement. This approach also follows the thinking that design can act as knowledge intermediary between distinct data sources and larger groups without specific knowledge relating to energy or emission accounting.

5.4 Reflections on Cross-Disciplinary Collaboration for Sustainability

Dashboards

A significant part of both sites is a function of cross-functional teams, bringing together design, data science, and sustainability disciplines. In fact, interviewees identified iterative sprints and user feedback as key in refining not just the user interface but also the data narrative: everything from deciding which metrics to foreground, to calibrating how often updates should appear on the dashboards. Often, the friction between brand custodians and data analysts itself produced constructive debates about user experiences that led incrementally to modification. This corroborates the arguments by Mulyani et al. (2020) that agile frameworks, in collaboration with domain expertise, will create stronger and better-adaptive final products in ESG communication.

Such frameworks also explain the trend to evolve responsibilities of designers as information mediators. The designers at Eni described balancing leadership's emphasis on brand identity with technical inputs from sustainability managers and arriving at a compromise focused on simplified visuals for general audiences. According to their product managers, the design teams at Enel started off with similarly brand-driven constraints but increasingly championed deeper in-dashboard detail, partly to appease specialized user segments—e.g., investors, analysts, NGOs—who had asked for more robust real-time explorations. It is in such an environment that design decisions will be less about a monolithic and static phenomenon but more a continuous outcome of negotiations across corporate hierarchies, user needs, and ethical aspirations.

6. Toward a Design Framework for Interactive Sustainability

Dashboards

The comparative insights provided by Eni and Enel's practices create a wider perspective on how such a dashboard can reach credibility, engage different audiences, and balance aspirational messages with transparent disclosure. Each one of the two platforms demonstrates some trade-offs, but a number of recurrent strategies are present that could form the base for a design framework for organizations willing to enhance their sustainability reporting. Ideally, the design framework for sustainability reporting platforms would be composed of conceptual pillars: information design, ethical commitments, user-centered engagement, and agile adaptation.

One core principle is to align the visual hierarchy with the data hierarchy. Accomplished designers make sure that the very most important data points are most visually prominent, while complementary or secondary data are available through progressive disclosure in a layered presentation that suits casual users interested in an overview and specialists needing in-depth analytics. The Eni and Enel platforms reveal variations on how to sequence information: from quick visual summaries that funnel deeper exploration to direct real-time toggles embedded within the main page. At the core, there is one principle: data significance shall guide its appearance, not solely brand aesthetic.

A second key pillar deals with providing pathways for user-driven critical inquiry. Sustainability data often consists of many variables, with overlapping time horizons. Dashboards can enable critical thinking by comparing across metrics, visualizing historical trends, and performing scenario analysis. Enel's interface best depicts interactive timelines and scroll-telling that foster curiosity, while Eni underlines the role of external, more technical documents. Advanced filtering or data overlays within the main interface, integrated by at least some dashboards, will increase user autonomy. By

adding disclaimers, clarifications, or "Why this metric matters" panels around each chart, organizations encourage reflexivity rather than blind acceptance.

Another fundamental building block is Embedding Transparent Methodological References directly in the interface. It should not be that users have to search through long PDFs to validate data credibility. Similarly, footnotes, side panels, or collapsible text boxes outline the standards that are applied to create the metrics, such as GRI, SASB, and TCFD, when auditing is taking place, what assumptions were used, and so on. Doing so would parallel research into how digital trust may be established—the ease of accessing and comprehensiveness of explanations about data origins can allay suspicions of selection bias (Smith et al., 2022; Šimunović, 2024). While Eni relies more on linked external documents, Enel's embedded references hint at a more integrated model that fosters in-the-moment check.

A fourth pillar pertains to Ensuring Narrative Integrity, wherein the storytelling elements—textual overviews, embedded videos, or case studies—of the dashboards truthfully reflect the substance of the data. The risk of greenwashing escalates when "success stories" overshadow or omit contradictory metrics, inviting doubts about authenticity. Effective dashboards would have both successes and challenges together on display, pointing out partial or unmet targets and explaining how the organization will address them. This balance may actually serve to increase user trust by demonstrating an intent to share current struggles, rather than simply providing marketing stories (Rodrigues & Franco, 2019).

A fifth foundation would be to create mechanisms for continued feedback and iteration. Agile digital product teams may embed mechanisms within dashboards where users can communicate confusion, seek clarification, or suggest additional depth. Such recursive processes spur iterative interface refinements and data augmentations. This helped Eni manage brand constraints through design sprints, while Enel employed user feedback in support of sophisticated interactive capabilities. In both cases, cross-functional dialogues among designers, data analysts, and sustainability stakeholders proved to be pivotal in shaping final outcomes. A formalized feedback channel might stimulate more vigorous community involvement and real-time alignment with the evolving nature of the data [Figure 7].

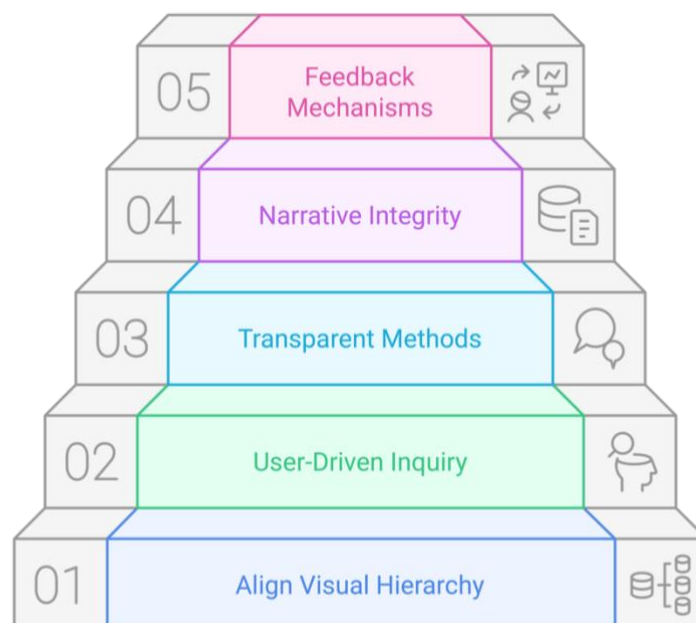


Figure 7. The Five Pillars for a Sustainable Dashboard

Taken together, these pillars put forward a robust design framework leveraged from best practices identified in both the Eni and Enel dashboards. By marrying layered information presentation with methodological transparency, balanced storytelling, and iterative user testing, the dashboard can move beyond one-dimensional brand promotion into serving as a credible, dynamic resource. The framework would have a number of wide-ranging applications well beyond the energy sector itself: from consumer goods to financial services, the ESG issues are no less pressing. But across all fields, the alliance of design thinking and ethics will change static disclosures into transformational vehicles of communication.

7. Conclusion

The comparison of Eni's "Eni for" and Enel's "Beyond Reporting" underscores the centrality of design and user interaction strategies in shaping trust and engagement within corporate sustainability reporting. While both dashboards represent serious attempts to communicate ESG data visually, they reflect divergent philosophies regarding data depth, user autonomy, and brand emphasis.

Eni's succinct layout and brand-centric visuals appeal to broader audiences seeking quick overviews, though readers must consult external resources to verify details. Enel's integrated interface, offering interactive toggles, in-dash methodological references, and scroll-telling, caters more thoroughly to varied user expertise levels. Yet both platforms demonstrate how design elements can enhance or potentially compromise perceptions of transparency, depending on how thoroughly corporate challenges, uncertainties, and partial progress are disclosed.

These findings chime with more general discussions around digital trust-building, greenwashing, and the interaction between design and ethics. Accordingly, there is an increased need by stakeholders for nuanced, user-friendly dashboards that go beyond showcasing achievements to include obstacles and ongoing targets in a balanced presentation. When design choices fall short of this demand, accusations of selective reporting or impression management can arise rather too easily (Šimunić, 2024). Conventional dashboards, on the other hand, provide open data references, real-time comparisons, or disclaimers related to incomplete metrics because their visual narrative corresponds to real-world performance complexity. Designers function instrumentally, nor merely as aesthetes, in deciding how users encounter data, navigate uncertainties, and make judgments.

The proposed design framework articulates several guiding principles that may lead organizations toward more authentic and interactive sustainability reporting. The design teams could transform dashboards into catalysts of informed discussion and continuous learning by embedding the visual hierarchy in data importance, methodological transparency within dashboards, and offering storylines that account for failures alongside triumphs. Set within agile product development, feedback loops can help distill this over time, enabling the evolution of dashboards that reflect the evolving realities of ESG. And in the final analysis, clear content, user-focused interfaces, and ethical imperatives may turn out to be just what it takes to change not only how companies do their measurements but also how they collaborate with their stakeholders to carve out more responsible and accountable pathways forward. Although Eni and Enel belong to a unique sector and cultural context, the examples derived from their dashboards give

meaning for a variety of industries around the world on how design principles, data integrity, and public trust can combine in a strong engine for sustainable innovation.

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