Deliverable D1

Creation of the project website, graphical identity and other online tools

SUSTENET: Sustainable Thermoelectrics European Network (CA24120)

Versions and history of changes

Version	Date	Notes	Lead author(s)*
V1.0	26/01/2026	Draft	Bruno Vicenzi
V2.0	30/01/2026	Reviewed and approved version https://doi.org/10.5281/zenodo.18433460	Bruno Vicenzi

1   Summary

This deliverable describes the online tools developed for the COST Action **SUSTENET**. These include:

- A colour branding based on three colours, namely a blue, a red and a green, and black for normal text.
- A logo that encompasses the main features of the Action, that are Thermoelectrics, Networking, and Sustainability.
- A website (www.SUSTENET.eu) that will be the official portal for the Action, in parallel with the information and services hosted on e-COST.
- Social media channels:
  - LinkedIn: https://www.linkedin.com/company/sustenet/
  - YouTube: http://www.youtube.com/@SUSTENET
- A F.A.I.R.-compliant repository, Zenodo, with a dedicated community: https://zenodo.org/communities/sustenet/

The graphic identity and the website have been created by the European Powder Metallurgy Association, that has a specialised internal team that already created such tools for several European funded projects and for their activities.
An initial set of KPIs to measure the performance of the website and of the social media has been proposed.

2 Table of Contents

3 Requirements

In the Memorandum of Understanding of the **SUSTENET** Action, the creation of the online tools for the Action is described inside WG4 and namely within Task 4.1:

> *T4.1: Online Tools. Establish and maintain an Action graphical identity, a website and social media accounts. Producing dissemination materials (factsheets, newsletters, review papers, technical notes, educational resources). Integrate a business-to-business matchmaking system on the website to facilitate networking and collaboration. Compiling information on external conferences, summer schools, internship opportunities, and job openings on the members-only SharePoint, including potential opportunities for collaboration arising from the exploitation of the results of the Action. Create a Zenodo SUSTENET community for Open Access publication and storage.*

The deadline for the deliverable being already at month 3 of the Action, the work started early on this subject. As specified in the budget for Year 1 approved by the Management Committee, the activities of creation of the logo and of the website were subcontracted to a trusted external

partner, the European Powder Metallurgy Association AISBL, that has a proven record of such activities for numerous European projects.

4   Branding and logo

The branding was designed to reflect the topic and action of **SUSTENET**. It was first based on three colours: red, blue and black. Once put into a draft, we felt the need to introduce a green colour as well, to insist on the sustainability aspect.

4.1   Symbology in colour choices

The **SUSTENET** visual identity is in fact a direct reflection of the scientific principles and collaborative spirit at the heart of our COST Action. At its core, the brand is built upon the thermoelectric effect, that we represented by the striking contrast between Primary Red (#e30521) and Primary Blue (#3333ff). These colors symbolize the hot and cold sides of a thermoelectric element, the fundamental temperature gradient required to generate clean, sustainable energy via the thermoelectric effect. Thus, the color palette is not merely aesthetic but a direct representation of thermoelectric physics.

- **Red (#e30521):** Specifically represents the **hot side** of a thermoelectric element.

- **Blue (#3333ff):** Specifically represents the **cold side** of a thermoelectric element.

- **Thermal Gradient:** The juxtaposition of these two colors within the "TE" monogram in the logo symbolizes the temperature difference (the Seebeck effect) required to generate power.

- **Green (#008c36):** Symbolizes the sustainability and ecological benefits resulting from efficient thermoelectric energy conversion.

- **Black (#000000):** Used for the wordmark to provide a grounded, professional contrast to the vibrant functional colors.
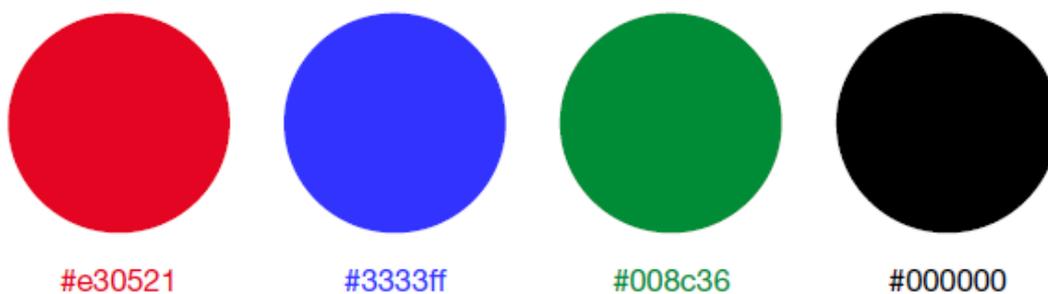

#e30521   #3333ff   #008c36   #000000

Figure 1   The colours for the SUSTENET branding.

4.2   Integrated logo design

The logo was designed to showcase the key features of the **SUSTENET** action, which are:

- Thermoelectrics (primary)
- Networking (primary)
- Collaboration
- Sustainability (primary)

- Reliability
- Science

Form this list, the preliminary ideas for the logo have been developed, and then refined by feedback from a committee comprising the Action Chair, the WG4 Leader and Co-Leader, and the Science Communication Coordinator and Co-Coordinator.

4.2.1 The "TE" Monogram

The logo is a literal "monogram of the science" behind the COST Action. Our logo translates complex science into a powerful visual narrative.

The central icon is a composite of the letters **T** and **E**, standing for **T**hermo**E**lectrics:

- **The "T" (Hot Side):** Rendered in red, it houses the **lightning bolt**, symbolizing the generation of electrical power from heat.

- **The "E" (Cold Side):** Rendered in blue, it houses the **green leaf**, symbolizing the sustainable application of this technology.

- **The Interaction:** The negative space between the letters reveals two profiles facing each other, two faces that represent the "NET" (network) of **SUSTENET**, showing the human collaboration, knowledge exchange, and networking necessary to bridge these scientific elements.

- **The Sustainable Outcome**: Nestled within the "E" is a green leaf (#008c36), representing our ultimate goal: leveraging thermoelectric technology to foster global environmental sustainability.

4.2.2 Typography and Hierarchy

- **Font:** The use of **Helvetica Neue** provides a clean, neutral, and scientific look that does not distract from the complex symbolism of the icon. Note: as this font is not practical for use in text and documents due to licensing, for those simpler fonts can be used, and for instance a similar open source font is Roboto[1].

- **Wordmark:** The text "**SUSTENET**" is placed in a secondary but supportive position to the "TE" icon, emphasizing that the network supports the science.

*Figure 2   The main version of the **SUSTENET** logo.*

4.3 Brand versatility for the various COST materials

The identity system is designed to remain legible across the various technical and administrative needs of a COST Action.

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[1] https://fonts.google.com/specimen/Roboto

- **Main Logo:** The primary version used for headers and cover pages.

- **Reduction:** Simplified versions (Scaling) ensure the hot/cold side distinction and the "TE" monogram remain visible even on small-printed materials or mobile screens.

*Figure 3   The main **SUSTENET** logo is perfectly scalable without losing parts of its message.*

- **Square Version:** A compact version designed for digital avatars or app-like icons, maintaining the core "TE" symbolism.
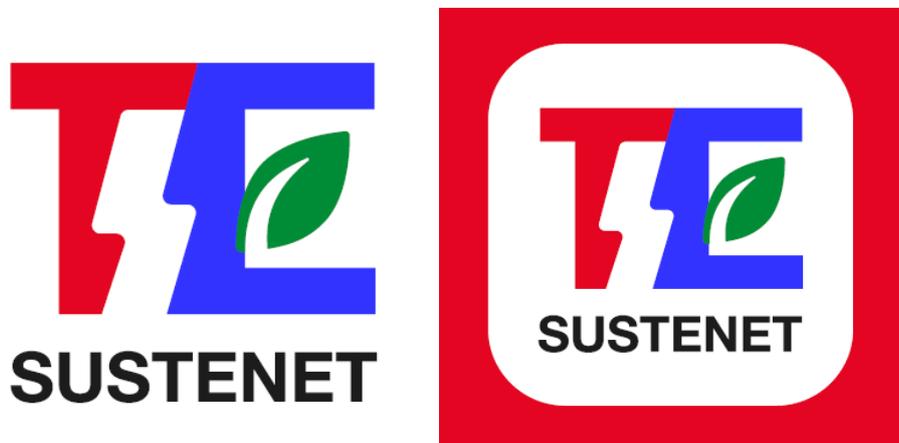

Figure 4   In the square versions, the TE is extracted from the Action name.

- **Negative/Monochrome Versions:** A high-visibility version (white on red) for use on colored backgrounds or dark-themed presentation slides. A monochrome version in black can also be used. These versions are clearly not preferable as part of the symbolism is lost.
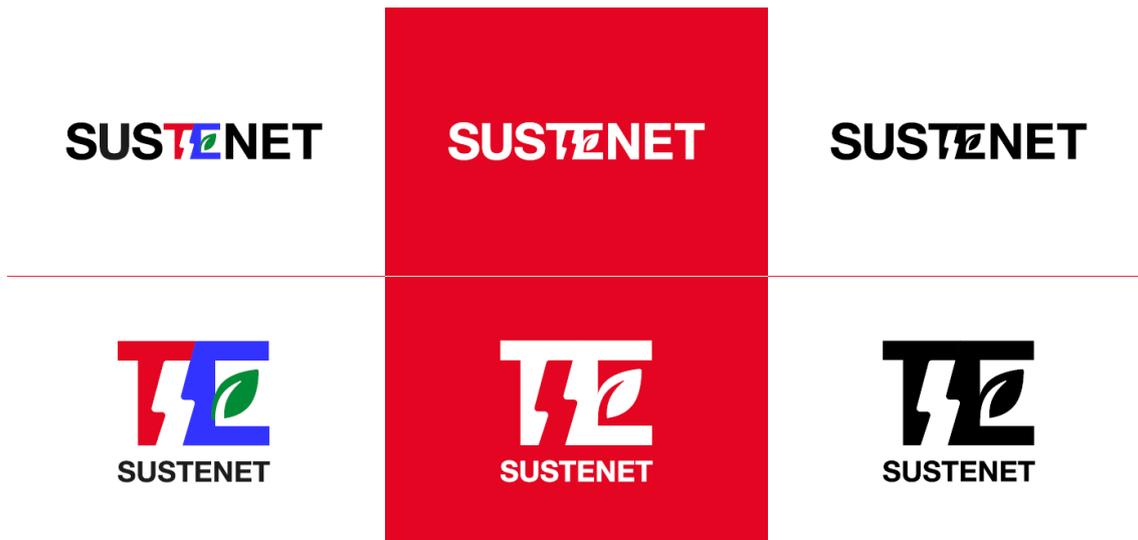
Figure 5   Examples of negative (centre) and monochrome (right) **SUSTENET** *logos.*

4.4 Final logo assessment

By using the hot and cold sides of thermoelectric elements, the logo tells the story of energy conversion and scientific collaboration leading to the making of a clean, sustainable power source.

We believe that the **SUSTENET** branding is an excellent example of purpose-driven design. It does not just look modern; it explains what the COST Action does. It successfully balances the urgency of energy research (red/bolt) with the calm of environmental protection (blue/green/leaf) and the connectivity of a human network (silhouettes).

5 Website: www.SUSTENET.eu

5.1 Choice of name and domain

In order to define the website, first of all some check on the existence of existing "confounding" websites was made, to define the website name and extension.

The initial idea, that was then adopted, was to limit the website name to the simple Action name, **SUSTENET**. Choosing a single-word domain is a strategic branding decision that emphasizes the identity of the network over its administrative framework. This may be best for many reasons:

- Simplicity: By excluding specifiers like "COST" or "Action," the domain remains short, impactful, and easy to communicate verbally or in print. The decision provides in fact several technical and aesthetic advantages:
    - o Avoiding Redundancy: The .eu extension already provides the necessary geographic and institutional context, signaling a European-level initiative without cluttering the primary name.
    - o Visual Symmetry: The "Main Logo" and "Square Version" focus heavily on the TE monogram. Including extra words in the domain would dilute the visual impact of this central "TE" branding, which represents the hot (red) and cold (blue) sides of the science. Using the exact same string for the website ensures a 1:1 match between the visual brand and the digital address, reducing cognitive load for the user
    - o Professional Aesthetics: In modern web standards, shorter domains are perceived as more established and "premium." This aligns with the choice of Helvetica Neue, a font known for its clean, professional, and modernist appeal.

- Distinctiveness: As a unique portmanteau of SUStainability, TE (ThermoElectrics), and NETwork, "**SUSTENET**" is distinctive enough to stand alone without needing qualifiers to explain its purpose.
- Evolution of the Network: While the current funding comes from a COST Action, the network may evolve into a permanent association, a research consortium, or a recurring conference series. A domain that is not tied to a specific funding mechanism ("Action") allows the brand to persist and remain relevant long after the initial COST funding period has concluded.

As mentioned, the decision to use the extension .eu seemed the most natural in this context. Clearly, some check was needed to ensure that there was no too similar existing website, that could divert traffic and create confusion in the occasional visitor. The analysis of the digital landscape in fact highlighted a few existing entities and platforms that could potentially cause confusion for users or search engines. Nevertheless, it was felt that the risk of confusion was anyway minor, and sufficiently mitigated by the use of the .eu extension. Table summarizes these "overlaps" and why the .eu domain helps mitigate confusion:

Table 1   Analysis of websites similar to www.SUSTENET.eu

Entity / Website	Nature of Overlap	Conflict Level	Why .eu distinguishes SUSTENET
SUSTENET (Game Networking)	A software project (built with Rust/Zig) for MMO and multiplayer game engines. It appears on GitHub and game development repositories.	**Medium (Technical)**	The .eu extension clearly signals a **scientific research/institutional** purpose, contrasting with the .io or GitHub-hosted nature of software tools.
NET SUSTAIN (Net-A-Porter)	A global high-end fashion platform's sustainability initiative.	**Low (Commercial)**	The focus is purely on retail/consumer goods; the scientific nature of **SUSTENET** (Thermoelectrics) is vastly different in intent and audience.
YouSustain / Sustain.net	Various non-profit conferences and legacy software sponsors using "Sustain" + "Net" combinations.	**Medium (Nomenclature)**	"**SUSTENET**" is a unique **portmanteau** (including the "TE" for Thermoelectrics), whereas others are generic combinations of common words.
Sustent B.V. / Sustent Group	Infrastructure and holding companies, primarily in the Dutch and South African markets.	**Low (Phonetic)**	The phonetic similarity is high, but the geographic and sectoral (finance/infrastructure) differences make confusion unlikely for researchers.
Latin Literary Sources	Academic texts referencing the Latin verb *sustenet* ("to sustain") in historical linguistics.	**Low (Lexical)**	While "sustenet" appears in search results for Latin syntax, the visual and scientific context of the website will immediately orient users.

The most significant potential confusion comes from the widespread use of the words "Sustain" and "Net" in the environmental sector. However, because the COST Action branding explicitly emphasizes the TE (ThermoElectric) monogram in the center of the name, the website address functions more like a technical acronym than a generic phrase.

By launching on a .eu top-level domain, **SUSTENET** establishes an immediate "search engine moat" within the European research space. This prevents the Action from being buried by commercial sustainability consultancies or US-based software projects (like the game networking tool) which typically use .com or .net. Users arriving at www.SUSTENET.eu are likely to be academic peers, industrial partners, or policy makers. The "clean" URL (devoid of "COST-Action") allows for a high degree of authority. When a user types a specific project name rather than a generic term, they are looking for the official "source of truth," which the .eu extension provides.

Thus, while the name 'Sustenet' has minor overlaps in the fields of software development and general sustainability, the specific ThermoElectric focus embedded in the brand and the geographical authority of the .eu domain provide a distinct and professional identity. The omission of administrative specifiers results in a 'premium' digital asset that stands apart from the crowded landscape of generic environmental networks.

For these reasons, the initial choice of www.SUSTENET.eu was confirmed and the website domain name secured so that the actual website structure could be built.

5.2 Website structure and initial appearance

The SUSTENET website was created by the contractor EPMA. It is hosted by the provider O2 Switch in France.

5.2.1 Visual Identity and Branding

The **SUSTENET** website employs a cohesive visual language designed to communicate "Sustainability" and "High-Tech Innovation" simultaneously.

- **Color Palette**: The design utilizes a professional "Clean Tech" palette. It predominantly features Green (symbolizing sustainability and the Green Deal) and Blue and Red (representing together the two sides of a thermoelectric element, cold and hot).
- **Logo Integration**: The **SUSTENET** logo serves as the anchor of the visual identity. It is featured prominently in the header, although in the monochrome negative version, ensuring brand recognition across all subpages.
- **EU Compliance**: The layout strictly adheres to COST Association and European Commission visibility requirements, featuring the official EU emblem and the "Funded by the European Union" disclaimer in a high-visibility location (the footer on all pages).

5.2.2 Layout and User Experience

The website is formatted using a modern, responsive grid system, ensuring full functionality across desktops, tablets, and smartphones.

- **Modular Content Blocks**: Information is broken down into scannable sections (e.g., "About," "Working Groups," "News"). This prevents "text-heavy" fatigue and allows evaluators to find specific Action metrics quickly.
- **Navigation Architecture**: A "flat" navigation structure is used, meaning most key information is no more than two clicks away. The primary menu clearly delineates between the Technical Working Groups and Network Management.
- **Call-to-Action (CTA) Focus**: Strategic use of buttons (e.g., "Apply to Join," "Read MoU") guides the user toward the Action's primary KPI: network growth and stakeholder engagement.

5.2.3 Graphic Elements and Iconography

To enhance scannability, the site utilizes vector iconography and other graphics:

- **Working Group Icons**: Each of the four Working Groups is represented by a unique icon, providing a visual "shorthand" that helps users navigate complex technical themes like AI or Supply Chain management.
- **Photography**: Pictures are and will be used to give the user the best experience. For example, in this first version a high-quality photo from the Brussels Kick-off Meeting is used to provide "social proof" of the network's active status and European reach.

5.2.4 Accessibility and Performance

- **Typography**: The site uses clean, sans-serif fonts (e.g., Arial or similar web-safe equivalents) to maximize readability for users with visual impairments, meeting standard Web Content Accessibility Guidelines (WCAG).
- **Loading Optimization**: Graphics are optimized for web use to ensure fast loading times, which is a critical metric for "Dissemination & Communication" reports to funding agencies.

5.2.5 Pages

The initial structure of the website is shown here. In the future, other elements and features could be added, to address the Action's needs. Grants, News and Events will be published on the relevant pages to keep the communication channel active and inform the interested stakeholders.

In the following, a description of the main parts of the website is given.

5.2.5.1 The Global Header: Navigation and Identity

The header serves as the primary orientation tool, ensuring that the Action's identity is immediately visible on every page.

- **SUSTENET Logo**: Positioned in the top-left, acting as a "Home" anchor.
- **Primary Navigation Menu**: Includes links to all main pages.
- **Strategic Intent**: Instant Recognition: To immediately validate that the user has reached the official website for CA24120.
- **Information Hierarchy**: By categorizing the navigation into scientific (Working Groups) and administrative (About/Management) sections, it allows different stakeholders (researchers vs. industrial partners) to find relevant data quickly.
- **User Persistence**: Using a "Sticky" or persistent header ensures that as users scroll through long technical pages, they never lose access to the site's main directory.

Figure 6   The Global Header (visible on all pages).

5.2.5.2 The Global Footer: Compliance and Accountability

The footer is the "legal foundation" of the website, also complying with its contractual obligations to the European Union and the COST Association.

- EU Acknowledgement: Includes the official EU flag emblem and the mandatory statement: "Funded by the European Union."
- COST Association Branding: Features the COST logo, reinforcing the Action's status as a supported Action. Includes a COST description and link to the COST website.
- Social Media Integration: Links to LinkedIn, X (Twitter), and YouTube.
- Legal & Privacy: Links to the Cookie Policy (icon bottom left).
- Contact Snippet: E-mail for the Grant Holder institution.
- Grant Compliance: To satisfy the Communication and Visibility requirements set by the European Commission and COST.
- Credibility & Trust: By placing the EU and COST logos alongside copyright information, the n establishes itself as an official, peer-reviewed European initiative.
- The "Safety Net" Navigation: It provides a secondary way to navigate (Sitemap) for users who have scrolled to the end of a page, encouraging them to stay on the site rather than bouncing away.

Figure 7   The Global Footer (visible on all pages).

5.2.5.3   Home Page (The Digital Front Door)

- Content: A high-impact section featuring the **SUSTENET** mission statement, the official COST Action branding (CA24120), and a summary of the thermoelectric challenge. It includes a news ticker/feed for the latest updates.

- Intent: To provide immediate context for first-time visitors (policymakers, industry, researchers). It establishes the Action's legitimacy through professional branding and highlights its alignment with the European Green Deal.
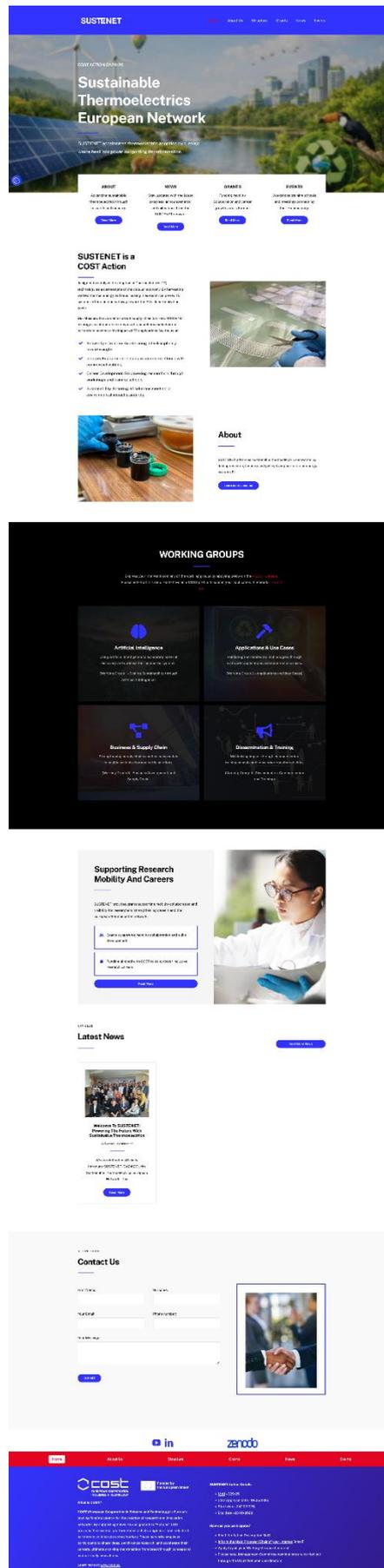
Figure 8   Screenshot of the Home page.

5.2.5.4 About **SUSTENET** (The Strategic Vision)

- Content:
    - Detailed breakdown of the Action's background, duration (2025–2029), and core objectives.
    - Four distinct sub-sections or tabs, each dedicated to a specific Working Group. Each section lists briefly the WG's specific tasks and goals.
- Intent:
    - It explains the why behind the network, specifically addressing the gap in the European thermoelectric value chain and the shift toward sustainable thermoelectric materials.
    - To demonstrate the interdisciplinary structure of the network. This page is crucial for showing how the work is distributed and how different scientific domains (from machine learning to business development) collaborate to reach the Action KPIs.

5.2.5.4 About **SUSTENET** (The Strategic Vision)

Figure 9   Screenshot of the "About us" page.

5.2.5.5 Structure (Governance)

- Content: An overview of the Management Committee (MC), the Action Chair, Vice-Chair, Grant Holder Scientific Representative, Working Group Leaders and co-Leaders, Science Communication and Grants Coordinators and co-Coordinators, which compose the Core Group of the Action.
- Intent: To provide transparency in governance. It proves that the Action is being managed according to COST Association regulations and identifies the key personnel responsible for the Action's success and financial oversight.

Figure 10   Screenshot of the "Structure" page.

5.2.5.6 Grants

The Grants page will act as a centralized "Call for Applications" portal. It typically outlines the specific financial instruments available to the **SUSTENET** community to support networking and research exchange.

- Content:
  - Short-Term Scientific Missions (STSM)
  - Young Researchers and Innovators Conference Grants
  - Inclusiveness Target Country Conference Grants
  - Dissemination Grants
  - "How to Apply" Roadmap
- Intent:
  - Driving KPI Achievement: The primary intent is to facilitate the fulfillment of COST-mandated metrics (number of missions, geographical spread, and gender balance). By centralizing these opportunities, the site ensures the Action meets its mobility targets.
  - Promoting Excellence and Inclusivity: By highlighting ITC and Young Researcher grants, the page signals a commitment to "Widening" participation, a core pillar of COST. It ensures that opportunities are not limited to senior researchers or well-funded institutions and countries.
  - Standardization of Procedures: Its intent is to provide identical information to all applicants, ensuring that the selection process is transparent and fair.
  - Knowledge Circulation: Beyond just "funding," the intent of this page is to encourage the cross-pollination of ideas. Every grant listed will be a mechanism to move knowledge out of localized silos and into the broader European Research Area.

Figure 11   Screenshot of the "Grants" page.

5.2.5.7 News & Events (Dynamic Dissemination)

- Content: A chronological archive of blog posts (like the "Launch" post), announcements for upcoming Training Schools, Workshops (e.g., at ECT2026), and reports from past meetings.
- Intent: To demonstrate active engagement and progress. This page serves as a live record of "Dissemination & Communication" activities—proving that the network is meeting its obligations to share knowledge and foster networking.

Figure 12   Screenshot of the "News" page.
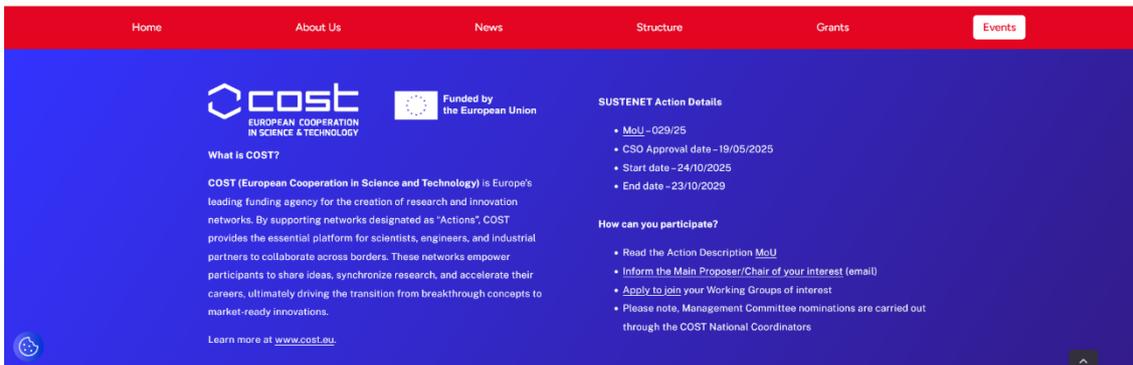
Figure 13   Screenshot of the "Events" page.

The maintenance and the update of the website (including posts and pages creation and editing) will be carried out by the WG4 leaders.

6 Social media: LinkedIn and YouTube

The success of a COST Action is measured not only by its scientific breakthroughs but also by its ability to foster a robust, trans-disciplinary community and disseminate its findings to a global audience. For **SUSTENET**, the digital ecosystem is the primary theatre where the "NET" (Network) component of our name becomes operational. By establishing a presence on carefully selected social media platforms, the Action aims to bridge the gap between complex thermoelectric research and its practical application in the transition toward a sustainable energy future.

The strategy for our social media launch is rooted in three core pillars:

- Alignment with Visual Identity: Every digital touchpoint – from the LinkedIn banner to the YouTube thumbnail – is an extension of the **SUSTENET** brand. The use of the thermal gradient (red for the hot side, blue for the cold side) serves as a persistent visual cue that reinforces our technical focus on thermoelectric energy conversion.
- Targeted Stakeholder Engagement: Rather than a broad, unfocused approach, **SUSTENET** has prioritized platforms that facilitate high-level professional networking and

high-fidelity scientific communication. Our goal is to reach a precise audience of academic peers, industrial innovators, and European policy makers.

The following sections detail the specific rationale behind the selection of our primary channels, LinkedIn and YouTube, and outline the roadmap for our future digital expansion.

LinkedIn is the most logical extension of the **SUSTENET** brand, particularly given the human profiles (the "NET") integrated into the negative space of your logo. The primary audience for a COST Action consists of researchers, industrial partners, policy makers, and EU officials. LinkedIn is the "natural habitat" for these professionals, facilitating high-level networking and B2B/Academic-to-Industry connections. As the Action grows, LinkedIn serves as the ideal platform to announce Working Group meetings, Short-Term Scientific Missions (STSMs), and job openings for young researchers. Unlike the rapid, ephemeral nature of platforms like X (formerly Twitter), LinkedIn allows for longer-form updates, professional articles, and document sharing (e.g., policy briefs or technical summaries), which suits the "Helvetica Neue" professional aesthetic of the brand.

It also includes features like "LinkedIn Events" and groups with different levels of access, that could be an easy way to expand the presence of the Action; while allowing to engage the very large LinkedIn community, nowadays permeating the whole professional community in Europe.

The other relatively obvious choice is YouTube. In fact, while the logo's colors (red/blue) symbolize the thermal gradient, static images can only do so much to explain the thermoelectric effect, that is a dynamic process. YouTube allows the Action to host webinars, experimental demonstrations of waste heat recovery, and interviews with experts. This is crucial for explaining the "Energy Bolt" (generation) and "Leaf" (sustainability) icons within the logo.

Also, a core mission of COST is training. YouTube acts as a permanent, searchable library of lectures and workshops, providing a legacy for the Action that outlives the 4-year funding period.

YouTube is the world's second-largest search engine. Videos titled with "Thermoelectric Sustainability" or "SUSTENET COST Action" will drive traffic directly to www.SUSTENET.eu, strengthening the site's SEO.

Choosing these two channels avoids the "brand dilution" that often occurs when a project tries to maintain a presence on too many platforms at once. Other platforms have been evaluated, but not included (at least for the moment, in the package of social media.

X (Twitter): While X is good for "live-tweeting" conferences, it can be polarizing (and presently suffers from the recent change of property and policies) and is often too fast-paced for deep scientific discussion. LinkedIn provides a more curated and stable environment.

Instagram/TikTok: These platforms are highly visual and consumer-focused. While they could be used for general public outreach in the future, they lack the professional infrastructure (like peer-to-peer networking or technical document hosting) required for the early stages of a research network.

Facebook: Facebook is increasingly viewed as a personal/social space rather than a professional scientific forum. The institutional weight of the .eu domain and the COST Action is better supported by the "business-first" atmosphere of LinkedIn.

The square version of the **SUSTENET** logo was specifically designed for these platforms. The square format fits perfectly into the circular and square profile frames of LinkedIn and YouTube. The vibrant primary red and blue will stand out in a professional newsfeed, immediately signaling "Energy" and "Science" to scrolling users.

The updating of the social media channels will be carried out by the WG4 leaders, if necessary with the collaboration of the Science Communication Coordinators, the Grant Coordinators and other volunteers from the participants in WG4.

6.1 LinkedIn

LinkedIn has evolved from a simple recruitment tool into a primary hub for professional knowledge exchange and B2B marketing.

Key Data & Trends (Europe focus):

- User Base in Europe: As of early 2024, LinkedIn has over 250 million members in Europe. Major hubs include the UK (35+ millions), France (28+ millions), and Italy (18+ millions).
- Growth Performance: LinkedIn has seen record levels of engagement globally, with a 13% year-over-year increase in sessions in 2023. In Europe, the growth is particularly strong in the DACH region (Germany, Austria, Switzerland) as more industries shift toward digital networking.
- Demographics: The platform is dominated by the 25–34 age group (roughly 52% of users), which represents the "Early-to-Mid Career" researchers and professionals critical for COST Actions.
- Usage Trend: There is a significant shift toward "Thought Leadership" content. Posts that share technical insights or industry-specific news (like thermoelectric research) receive significantly higher engagement than simple corporate updates.

The LinkedIn page https://www.linkedin.com/company/sustenet/ was created very early in the Action, on the date of the kickoff meeting on 24th October 2025, before the branding was even first conceived, and has just recently been updated with the chosen **SUSTENET** logo (Figure 6).
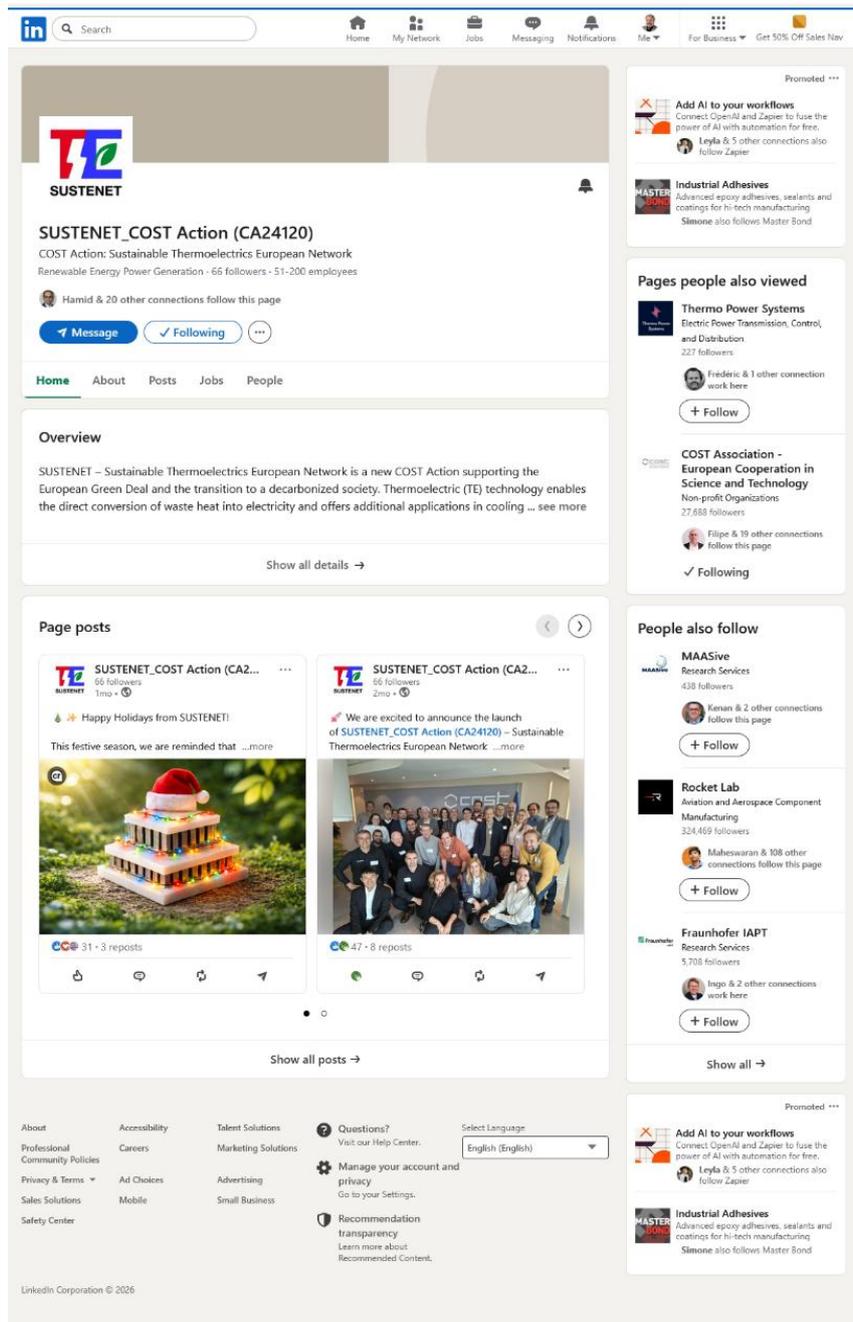
*Figure 14   The **SUSTENET** LinkedIn page.*

At the moment, the page has collected almost 70 followers, a figure that is expected to grow more when news about events, technical content and grants will be published.

LinkedIn posts will systematically include a limited set of relevant scientific, sustainability-related, and COST institutional hashtags to maximize visibility and engagement: e.g., #SUSTENET #COSTAction #Sustainability, ect.

6.2 YouTube

YouTube serves as the world's most significant video-sharing platform and the second-largest search engine, making it indispensable for scientific dissemination.

Key Data & Trends (Europe focus):

- User Base in Europe: YouTube has a massive reach in Europe, with over 90% internet penetration in many Western and Northern European countries. For example, Germany and France each boast over 50 million active users.
- Performance Trends: The "Shorts" format (vertical video under 60 seconds) has exploded, reaching 70 billion daily views globally. For a COST Action, this presents an opportunity for "Science Snaps", quick, 30-second explanations of thermoelectric concepts.
- Learning Intent: Over 85% of users report using YouTube to learn how to do something or to gain new knowledge. This "educational intent" makes it the perfect host for **SUSTENET** webinars and technical workshops.
- Retention: Educational and "long-form" technical content (10–20 minutes) maintains higher retention rates among academic audiences compared to general entertainment, as viewers treat the platform as a professional library.

Although no video material was available yet, the **SUSTENET** channel was created in January 2026, with the following address: http://www.youtube.com/@SUSTENET

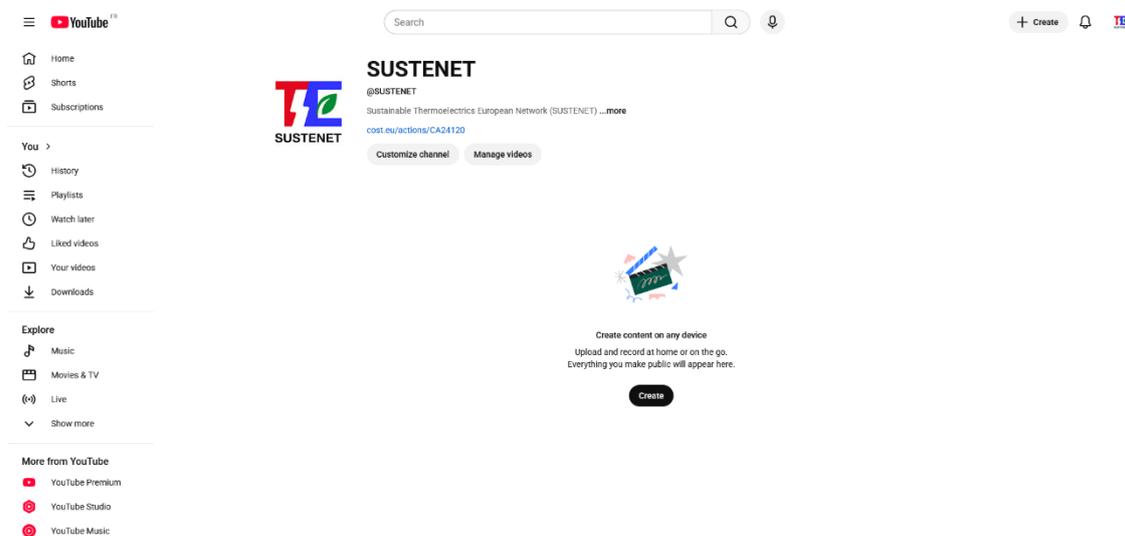*Figure 15   The **SUSTENET** YouTube channel.*

It will be used to host material from the Action, promotional videos, short interviews, and so on.

7   Repository: Zenodo

In line with the "Leaf" symbol in our logo, our social media strategy emphasizes the creation of a "long-tail" legacy. By hosting technical content on permanent repositories, we ensure that the knowledge generated during the life of the Action

remains accessible and impactful well beyond the official funding period.

The addition of a Zenodo Community represents the final, critical layer of the **SUSTENET** digital infrastructure. While social media (LinkedIn and YouTube) handles communication and dissemination, Zenodo focuses on exploitation and open science, ensuring the Action's technical outputs are preserved and discoverable.

Zenodo, developed under the European OpenAIRE program and operated by CERN, is the world's leading "catch-all" repository for research. For a COST Action, its importance is manyfold:

- Legacy Preservation: Unlike project websites which may expire, Zenodo provides a permanent archive. Datasets, papers, and presentations will be stored for the next 20+ years.
- Open Access Compliance: It ensures the Action meets the European Commission's mandates for Open Access, allowing researchers without institutional subscriptions to access **SUSTENET**'s findings.
- Version Control: It allows researchers to update datasets or software while maintaining a clear history of changes.
- European governance: Zenodo is an European initiative, data are stored in Europe and thus less sensitive to geopolitical access risks in the future.

Zenodo has become a cornerstone of the European Research Area (ERA).

- Total Reach: As of 2024, Zenodo hosts over 3.5 million records.
- Engagement: The platform receives millions of visits per month, with a high concentration of users from European universities and research centers.
- Trust Factor: Because it is hosted by CERN (the European Organization for Nuclear Research), it carries a level of prestige and technical reliability that far exceeds commercial cloud storage.
- Growth: The number of "Communities" on Zenodo has grown exponentially, with thousands of Horizon Europe and COST Actions now using it as their primary data repository.

The FAIR principles (Findable, Accessible, Interoperable, Reusable) are the "gold standard" for scientific data management. Zenodo is built specifically to fulfill these requirements:

- Findable (F): Every upload is assigned a DOI (Digital Object Identifier). This makes **SUSTENET** outputs uniquely citable in academic journals.
- Accessible (A): Data is stored using standard protocols (HTTP/OAI-PMH), ensuring it can be retrieved by both humans and machines.
- Interoperable (I): Zenodo uses "JSON-LD" and "Dublin Core" metadata standards. This means that if a researcher searches for "Thermoelectrics" on a different European portal, **SUSTENET**'s data will appear in the results.
- Reusable (R): Zenodo allows the Action to attach specific licenses (like Creative Commons) to its work, clearly telling others how they can legally use the data.

Creating a dedicated community is more than an organizational step; it is a branding and reporting tool:

- Centralization of Outputs: Without a community, **SUSTENET**'s papers would be scattered across Zenodo's millions of files. The community creates a "digital bookshelf" where all Working Group outputs are gathered in one place.
- Branding Consistency: The community page will feature the **SUSTENET** logo, reinforcing the visual identity of the "hot/cold" gradient (red/blue) and the sustainability leaf. This

ensures that even in a technical data environment, the Action's visual brand is recognized.

- Simplified Reporting: When it comes time for the Action's Grant Holder to prepare the Yearly Progress Report, they can simply export a list of all DOIs from the **SUSTENET** Zenodo community. It acts as an automated, real-time bibliography of the Action's success.
- Quality Control: The curators of the **SUSTENET** community (in particular the Science Communication Coordinator) can review submissions before they are accepted, ensuring that only high-quality, branded, and relevant data are associated with the Action.

The Zenodo **SUSTENET** community is accessible at the following address: https://zenodo.org/communities/sustenet/. For the moment, only the Memorandum of Understanding has been uploaded there (Figure 8).
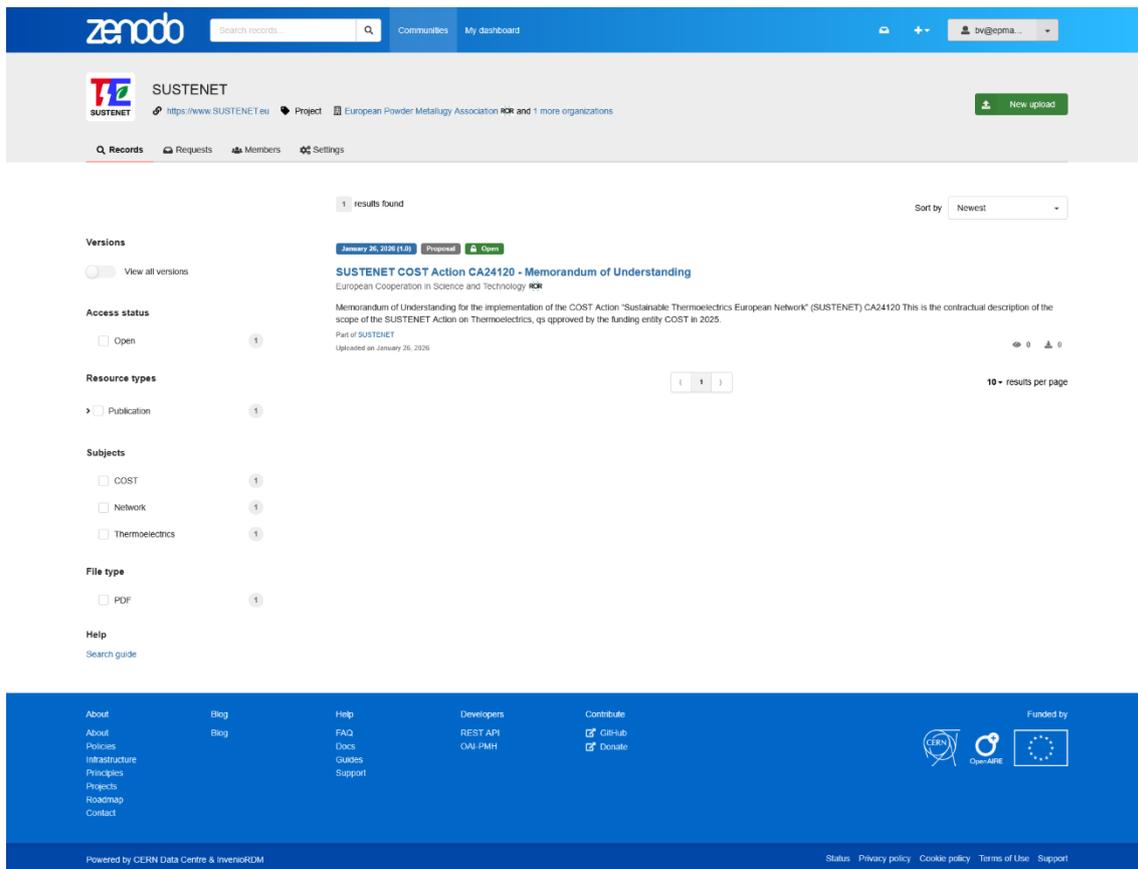

*Figure 16   The Zenodo community for **SUSTENET**.*

The curation of the Zenodo community will be carried out by the Science Communication Coordinators, if necessary with the collaboration of the WG4 leaders, the Grant Coordinators and other volunteers from the participants in WG4.

8 Measurement of online performance

The performance of the online tools will be measured via the analytics data offered by the platforms.

The website will be monitored via Google Analytics: there the page views, users, sessions, references, and geographic provenience can be monitored.

In LinkedIn and YouTube, indicators like number of followers, views, interactions, view duration (for videos) will be collected.

For Zenodo, view and downloads are also available.

A few KPIs have been set for the online tools performance, in some cases to be checked every year, in other cases to be checked at the end of the Action, but monitored every year to identify critical deviations from the forecast: in case of negative deviations, actions will be taken to improve the performance, depending on the specific KPI. The KPIs are shown in Table 2.

*Table 2   KPIs for the **SUSTENET** online tools.*

Tool	Monitored variable	KPI	When
Website	Users	1000	Yearly
	Page views	5000	Yearly
LinkedIn	Followers	400	End of Action
	Views	5000	Yearly
	Impressions	1000	Yearly
YouTube	Followers	100	End of Action
	Views	1000	End of Action
Zenodo	Views	500	End of Action
	Downloads	1000	End of Action