



---

SUSTainability Advanced and  
Innovative Networking with 6G  
European Lighthouse project

<https://sustain-6g.eu/>

# Contact details

*Follow us on social media!*



@sustain-6g



<https://sustain-6g.eu/>



@sustain-6g-project



[info@sustain-6g.eu](mailto:info@sustain-6g.eu)



SUSTAIN-6G



Co-funded by  
the European Union

**6G**SNS

SUSTAIN-6G project has received funding from the Smart Networks and Services Joint Undertaking (SNS JU) under the European Union's Horizon Europe research and innovation programme.

Grant Agreement Number 101191936



# Project Consortium

24 partners & 10 European countries

NOKIA

Coordinator



Technical manager

b com



Innovation through Collaboration



JOHN DEERE



Innovative solution For surgery



EMERGING NETWORKS & APPLICATIONS



Politecnico di Torino



QAMPO



Thinking Forward



independent telecoms experts

SIEMENS



# Project Scope 6 cross-points

## Methodology for 6G Systems

### ALIGNING WITH GLOBAL SUSTAINABILITY GOALS

SUSTAIN-6G integrates global sustainability goals, values, regulatory and standards frameworks, and vertical sector-specific needs across at least agriculture, e-health, and smart energy to guide 6G technology collection and requirements identification.



### ESTABLISHING SUSTAINABILITY METRICS AND PROCESSES

Standardised metrics and methodologies, including ECO-design and responsible innovation concepts, are developed to assess and enhance sustainability quantitatively and qualitatively in 6G systems.



### 6G AS A SUSTAINABILITY ENABLER

By addressing vertical sector needs, SUSTAIN-6G leverages 6G technologies to enable more sustainable practices in agriculture, energy, and e-health through innovative connectivity and data solutions.



### ADVANCING SUSTAINABLE 6G TECHNOLOGIES

The project expands on promising technologies across network domains, including energy-efficient RAN, core and cloud, optical networks, security and privacy, AI-native solutions, and responsible AI for sustainable 6G systems.



### PROOF-OF-CONCEPT AND VALIDATION

Through PoC collaborations, SUSTAIN-6G evaluates the sustainability impact of solutions and methodologies, ensuring practical implications for various verticals.



### CONSOLIDATION AND GUIDELINE DEVELOPMENT

Insights and proven practices will be compiled into guidelines, roadmaps, and standards to embed sustainability into 6G and vertical ecosystems, fostering societal, economic and environmental improvements.



# Project Motivation

## 6 dimensions

Sustainability with a holistic approach



TO OVERCOME THESE SHORTCOMINGS, SUSTAIN-6G WILL LEAD THE WAY TOWARDS A HOLISTIC PERSPECTIVE OF SUSTAINABILITY IN THE CONTEXT OF 6G.



The current work in research and standards towards sustainability in 6G systems has a set of key shortcomings:



*SUSTAIN-6G Motivation:  
Sustainability needs a holistic approach*

- **Comprehensive Sustainability Approach:** Addresses six dimensions of sustainability (environmental, societal, and economic) across both, “Sustainable 6G” technology, and “6G for Sustainability” in vertical scenarios.
- **End-to-End Perspective:** Covers the entire network scope, from devices (e.g., sensors, vehicles, handhelds) to services (e.g., augmented reality, forecasting).
- **Lifecycle Consideration:** Includes all stages of assets, from design, planning, and deployment to operation, phase-out, and disposal.
- **Standardised Metrics:** Develops processes to define sustainability metrics and evaluate trade-offs and gains effectively.

# Project Objectives

## 6 sustainable goals

For 6GMethodology 6G Systems

1

Identify and understand sustainability needs and values

2

Define methodologies for sustainability definition and assessment

3

Enhance integration of vertical UCs with 6G and enabling technologies to jointly reduce footprint and maximise handprint

4

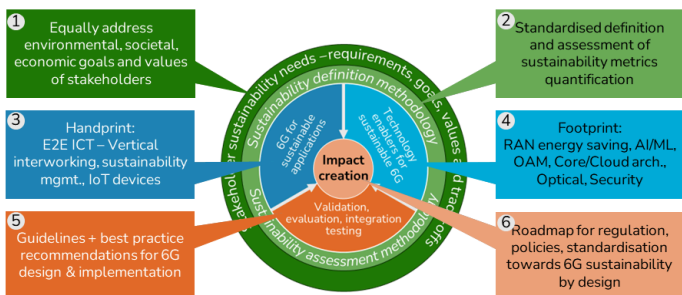
Enhance 6G technologies to reduce footprint and increase handprint

5

Validate, evaluate, and demonstrate sustainability value

6

Impact generation, sustainability guidelines and strategic roadmap



Objectives of SUSTAIN-6G:  
Advancing Sustainability in 6G Systems