



RIVCIRCULAR · TOPIC 2 · CONSORTIUM-BUILDING WEBINAR

SCWG-LOOP

Supercritical water gasification of wet residues for circular energy, clean water and nutrient recovery

Waste → Energy + Water

TRL 6 → 8

36 months

up to 100% funding

Project Overview

TOPIC — select the RIVCircular topic

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Construction and Demolition Waste (CDW) Circularity



Circular Energy Integration: Valorising Local Waste Streams for Industrial Efficiency

☐

Electric Vehicle (EV) Batteries Recycling and Reuse

☐

Circular Economy in the Textile Industry

☐

Digital Solutions for the Circular Economy

PROJECT TITLE

SCWG-LOOP — Supercritical water gasification of wet residues for circular energy, clean water & nutrient recovery

LEAD ORGANISATION

Energy Policy Network (KOIN.S.EP.)
Greece · Attica region

CONTACT PERSON

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Project Summary

SCWG-LOOP demonstrates supercritical water gasification (SCWG) as a circular-energy pathway for wet local residues — sewage sludge, biomass and organic waste — that are otherwise costly to dispose of. Above the critical point of water (>374 °C, >221 bar) and without pre-drying, these streams are converted into a methane- and hydrogen-rich “ener-gas”, clean water, and recoverable phosphorus. Internal heat recovery makes the system energy-positive.

GOAL

Demonstrate, at a real operational site, that wet-waste SCWG delivers energy, clean water and nutrients with verified, energy-positive performance — advancing the reactor from TRL 6 to 8 over 36 months.

EXPECTED IMPACT

A replicable, TRL-8 circular-energy solution that cuts disposal costs and biogenic emissions, recovers a critical nutrient (phosphorus), and transfers across RIVCircular regions via a shared blueprint.

Partners Sought

Partner types and the role / expertise we are looking for to complete the consortium (≥ 3 entities from ≥ 3 eligible countries).

Partner type	Expected role and expertise required
Technology / research centre	SCWG reactor and heat-integration technology; supercritical process engineering; corrosion-resistant reactor design.
SME / industrial technology provider	Demonstration-unit build, commissioning and scale-up to TRL 8.
Host site — WWTP operator or industry (utility / public body / large company)	Demonstration site; feedstock supply (sludge / biomass); offtake of gas, water and phosphorus.
Public body / regulatory partner	Permitting; regulatory-framework validation; MRV and carbon-accounting alignment.

LET'S COLLABORATE

For more information



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