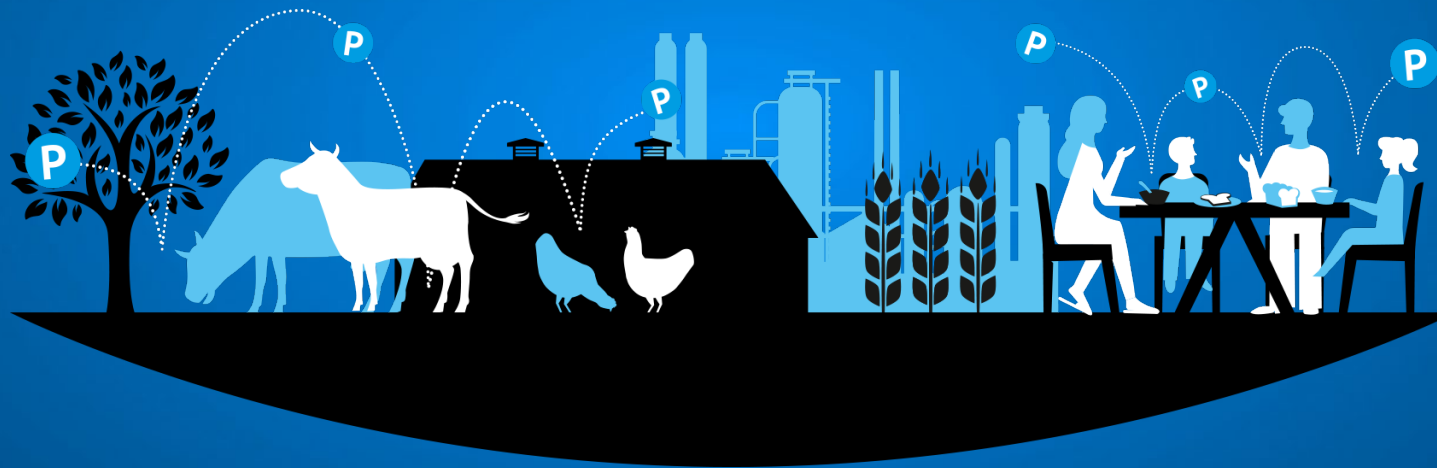
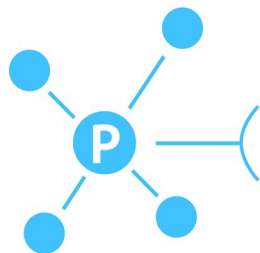




European Sustainable Phosphorus Platform



Italian Phosphorus Platform
12th December 2023



European Sustainable Phosphorus Platform

Legal entity,

→ **transparency**

→ **clear decision making**

→ **representation**

- established 2014

- not-for-profit association

- statutes are public

- EU Transparency Register no. 260483415852-40

100% membership funded

→ **credibility, independence**

50+ paying members :

industries, SMEs, R&D institutes & projects,

national platforms, cities & regions

→ **balance between interests and industries**

What they said ...

	<p>Reduction in fertiliser P use is certainly possible, but it will require decades to reduce soil P and, therefore, P losses. <i>Fien Amery, ILVO Flanders</i></p>
	<p>The 50% nitrogen loss reduction target by the green deal is on average required in the EU to protect air and water quality but it varies strongly with location. <i>Wim de Vries, Wageningen University & Research</i></p>
	<p>The waste water sector is already removing nutrients and supporting reuse of nutrients. We want to extend this in order to contribute to sustainable nutrient management and the Circular Economy, <i>Sarah Gillman, EurEau</i></p>
	<p>DG R&I is working on new, systemic approaches to combat nutrient pollution from all sources and bring nitrogen and phosphorus flows back within Planetary Boundaries, <i>Katja Klasing, European Commission DG Research & Innovation</i></p>
	<p>It is great to see the Colombo Declaration goal embraced by the EU Farm to Fork Strategy. 'Halving Nitrogen Waste' from all sources will help meet multiple SDGs, saving billions of Euro in fresh nitrogen inputs. <i>Mark Sutton, UKCEH & INMS</i></p>
	<p>In line with the zero pollution ambition of the EU Green Deal, the Commission will propose an integrated nutrient management action plan to address nutrient pollution at source and a better management of N and P throughout their lifecycle. <i>Andrea Vettori, European Commission DG Environment</i></p>
	<p>European policies, such as the CAP, need to be clearly aligned with the targets of the Farm-to-Fork strategy. Major pollutants, particularly intensive livestock farming, have to be addressed. <i>Jessica Stalder, University of Rostock</i></p>
	<p>Nature and the health of ecosystems on which all life depends are under threat. One major reason is agricultural pollution. We must take transformative action to address this crisis. <i>James Byrne, Wildlife Trusts Wales</i></p>
	<p>The workshop provided an excellent overview of the latest policy and science, and showed how the nutrient 'community' must work together to achieve extremely ambitious goals. <i>Rachel Dils, Environment Agency (England)</i></p>
	<p>We accept the F2F ambition to reduce nutrient losses by 50%. Supporting farmers with innovative solutions is a precondition. Nevertheless, 2030 seems unrealistic for this huge challenge and requires a full impact assessment. <i>Tiffanie Stephani, Fertilizers Europe</i></p>
	<p>Finnish agriculture has already decreased P use by -70% and N use -30%. MTK considers that Farm-to-Fork targets should not fix the same nutrient reduction percentages for all Member States. <i>Liisa Pietola, Finland farmers and forests organisation</i></p>
	<p>Nitrogen and phosphorus boundaries are all too often forgotten as a major environmental</p>

ESPP members



Achievements 2023

ESPP in action 2023

EU regulatory and policy dossiers

- Green Deal
- Sewage Sludge Directive
- * **Urban Wastewater Treatment Directive 'Recast'**
- Fertiliser supply and food security
- Green Finance 'Taxonomy'
- * **Critical Raw Materials Act**
- EU Fertilising Products Regulation (FPR)
- * **Soil Health Act**
- CAP (Common Agricultural Policy)
- BAT (Industrial Emissions Directive)
- R&D: Horizon Europe, LIFE, Interreg, Bioeconomy Strategy ...
- Recycled nutrients in certified Organic Farming
- Animal Feed Regulation
- Nitrates Directive (recycled N in processed manure)
- Integrated Nutrient Management Action Plan

Revision launched
Evaluation support [study 12/2023](#)

Proposed revised Directive [26/10/22](#)
Proposal includes P and N recovery

Delegated act [13/06/2023](#)
Includes: P- recovery from sewage

Phosphate Rock & P4 remain on "Critical" list
but not 'Strategic'

[OJ: 8/8/2023:](#)
Manure in compost, digestate, ashes now included (conditions)
'Processed Manure' and other Cat2-3 ABPs still [pending](#)

Proposed new Directive [5/7/2023](#)
Proposed maximum soil Olsen P levels

Struvite & phosphate salts from sewage
authorised [Jan. 2023](#)

Evaluation [open to 8/3/24](#)

??

* = currently with European Parliament and Council

National policies

- Austria [proposed](#) sewage P-recovery obligation
- Baltic Nutrient Recycling Strategy (HELCOM)

Communications

- 12 x ESPP eNews n° 73 - 81
- 5 x SCOPE Newsletter
 - SOFIE2
 - N-recovery (x3)
 - IFOAM/EWWMC/RAMIRAN
- Mailchimp emailing list:
 - 107 000 recipients worldwide
- Social media - # followers
 - LinkedIn 1421 (+405 since 02/2023)
 - Twitter 2581 (+100 since 02/2023)
 - SlideShare



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In this issue

[SOFIE3: call for presentations – open to 15th October](#)
[NERM Nutrients in Europe Research Meeting - call for abstracts to 15th November](#)

[EU Soil Health Directive proposal](#)
[EU proposed food waste reduction targets and actions](#)
[What is the nutrient recycling potential of food wa](#)
[Proposed criteria for "Processed Manure" in EU fi](#)



SCOPE NEWSLETTER



Summary of the second
**Summit of the Organic Fertiliser Industry
in Europe (SOFIE)**

Brussels and online 17th – 18th January 2023

www.phosphorusplatform.eu/SOFIE

This SCOPE Newsletter summarises the second meeting of the Organic and Organo-Mineral Fertilisers industries, SOFIE2, organised by ESPP with support of [EUROFEMA](#), [ECOFI](#), [Fertilizers Europe](#) and [IFS](#) (International Fertilisers Society).

Over 230 companies, stakeholders and experts participated and met at SOFIE (130 in Brussels and over 100 online), including from Unimer, DCM, Koppert, CCm, Ferm O Feed, Yara, Timac Roullier, Sonac, K&S, Fertecon/S&P Global, Lumbricus, Fetimanure, LBST, Omya, SEDE Veolia, Agrobiogel, Teagasc, Mills Nutrients, Deleplanque, Tessengerlo, Citribel, Compo, TEMA, Wykes, NMI, N2 Applied, Axegård, Honkajoki Oy, Protix, WEW, Benefert, Agrana, Soepenber, Evergreen, Biocompig, Tervalis, AgroBiogel, Adas, Teagasc, EFCI, Knoell, CerTrust, Barkwith, Arche, Artemisa, European Commission, Irish Ministry for Agriculture, Danish Agricultural Agency, Copa Cogeca ...

The first SOFIE conference was held in 2019, and is summarised in www.phosphorusplatform.eu/Scope130
For this second SOFIE, slides, full list of participants (Brussels and online), session recordings and transcribed 'chat' are available to all registrants via the Swapcard networking app.



Dossiers underway

Urban Waste Water Treatment Directive recast

Proposed new art. 20

"Member States shall take the necessary measures to ensure that sludge management routes are conform to the waste hierarchy provided for in Article 4 of Directive 2008/98/EC. Such routes shall maximize prevention, re-use and recycling of resources and minimize the adverse effects on the environment. The Commission is empowered to adopt delegated acts in accordance with the procedure referred to in Article 27 to supplement this Directive by setting out the minimum reuse and recycling rates for phosphorus and nitrogen from sludge, in order to take into account available technologies for phosphorus and nitrogen recovery in sludge"

European Commission initial proposed text for the UWWTD revision:

https://environment.ec.europa.eu/publications/proposal-revised-urban-wastewater-treatment-directive_en

Urban Waste Water Treatment Directive recast

Other proposed changes:

- tighter P and N discharge limits
- collection and treatment for agglomerations > 1 000 p.e.
- quaternary treatment -> polluter pays principle for pharmaceuticals and cosmetics
- waste water treatment should be “energy neutral” by 2040
- new definitions of sludge, micro-pollutant ...

[https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2022/0345\(COD\)&l=en](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2022/0345(COD)&l=en)

Urban Waste Water Treatment Directive recast

Parliament and Council positions voted Oct 2023 – now in trilogue

- Parliament and Council: both maintain defining minimum 'reuse & recycling' rates for P (art. 20)
- Council (only): to delete 'reuse & recycling' of nitrogen
- Both: widen to 'reuse & recycling' from wastewater (not only from sludge)
- Parliament (only): support development of a market for recovered nutrients
- Both: add N₂O to climate emissions
- Differing positions on levels and calendar for P and N removal requirements

Parliament voted position: https://www.europarl.europa.eu/doceo/document/TA-9-2023-0355_EN.pdf

Council position: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CONSIL:ST_14271_2023_INIT

ESPP letter to Parliament and Council for trilogue: www.phosphorusplatform.eu/regulatory

Sewage Sludge Directive expected revision

JRC “Feasibility study in support of future” revision published [Nov. 2023](#)

- Considers TWO scenarios
 - Agricultural use of treated sewage sludge, with tighter monitoring and contaminant limits
 - Mandatory sludge incineration with P-recover, for sewage works above a certain TBD size
- Rejects co-incineration

Stakeholder comment and input is invited

Questions raised in the study include:

- ***contribution of sewage sludge to soil organic carbon***
- ***contaminants (land use) – risk assessments – combination effects:
industrial chemicals, pesticides, pharmaceuticals, personal care chemicals, PFAS, microplastics***
- ***proposes agricultural use only if conform to EU FPR (CE-Mark) – what does this mean ?***
- ***agronomic efficiency of nutrients in treated sewage sludge***
- ***option of P-recovery upstream of combustion not considered***

Nitrates Directive evaluation / revision

Public consultation on evaluation open to 8th march 2024

*Questions raised in online evaluation questionnaire include:
climate change, food security, sustainability, nutrient recycling, intensive livestock production,
EU commitment to reduce nutrient losses by 50% by 2030*

ESPP “proposals” on recycled nutrients (see www.phosphorusplatform.eu/regulatory)

exempt manure recovered nutrients from Nitrates Directive limits if:

- properties not significantly different from a synthetic fertiliser → <1% C_{-org}*
- no reduction in Nitrates Directive total-N application limits*
- product has End-of-Waste and Fertiliser status (under EU FPR or national legislation)*

*i.e. EU FP “Mineral”
fertiliser criteria*

EU "Taxonomy"

EU criteria for 'Sustainable Finance'

Published Delegated Act [2023/2486](#)

includes P recovery

from municipal wastewater

- Wording widened ("from on site" deleted)

- Not P-recovery from other streams

- Not N-recovery

- **contacts ongoing for future updates**

2. Water supply, sewerage, waste management and remediation activities

2.1. Phosphorus recovery from waste water

Description of the activity

Construction, upgrade, operation and renewal of facilities for recovery of phosphorus from urban waste water treatment plants (WWTP) (aqueous phase and sludge) and from materials (i.e. ashes) after thermal oxidation (i.e. incineration) of sewage sludge.

The economic activity only includes the facilities and processes that make phosphorus recovery possible, not the previous steps, such as waste water treatment or incineration facilities.

The economic activities in this category could be associated with several NACE codes, in particular E37.00, E38.32 and F42.99 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Technical screening criteria

Substantial contribution to the transition to a circular economy

1. For the process integrated at the waste water treatment plant, covering typically phosphorus salts such as struvite–magnesium ammonium phosphate ($\text{NH}_4\text{MgPO}_4 \cdot 6\text{H}_2\text{O}$), the phosphorus recovery process recovers at least 15 % of the incoming phosphorus load. Only the harvested material, such as struvite, is counted for the calculation of this threshold.
2. For down-stream recovery after sewage sludge thermal oxidation with chemical phosphorus recovery or after sewage sludge thermal oxidation with thermo chemical phosphorus recovery, the process recovers at least 80 % of the incoming phosphorus load from the respective input material, such as sewage sludge ash.
3. The phosphorus extracted out of the system is used either as a component material in a fertilising product compliant with Regulation (EU) 2019/1009 of the European Parliament and of the Council ⁽⁴⁰⁾ or national fertiliser legislation where it is more stringent, or in another field of application where the recovered phosphorus fulfils specified functions in accordance with the respective regulations.

EU Soil Health Monitoring & Resilience Directive

COM proposal:

- “objective ... to achieve healthy soils by 2050”
- maximum soil P is an obligatory quality criterion (Olsen-P max 30 – 50 mg/kg)
- maximum soil N must be defined if causing critical ecosystem damage
- reference to Green Deal target to “to “reduce nutrient losses by at least -50% without deteriorating soil fertility”

P in EU Critical Raw Materials Act

Currently under discussion in Parliament & Council

“Phosphorus” (P₄) and “Phosphate Rock” remain on ‘Critical’ list
but not on ‘Strategic’ List*

“Strategic Technologies” are defined
as: batteries, renewable energy, data
and communications, aerospace

Compromise EP and Co ([11/2023](#)):

- ‘Strategic’ List not modified, except add aluminium

All ‘Critical’ Raw Materials:

- monitoring of supply and uses
- programmes to develop recovery and recycling
- stress tests every three years

ESPP “[Declaration](#)” on Elemental Phosphorus and PPA as ‘Strategic’ Raw Materials

Recycled nutrients in certified Organic Farming

ESPP – IFOAM joint meeting – Monday 18th September 14h-17h

Meeting conclusions are validated by IFOAM, published in [SCOPE Newsletter n°149](#)

Proposed follow-up actions

- request EGTOP update of the 2016 Opinion on calcined phosphates
- producers to submit to national authorities, for transmission to EGTOP, dossiers on
 - biochars,
 - inorganic phosphates derived from ashes,
 - recycled nutrient products from aquaculture sludge, seafood processing.
- IFOAM Board to confirm objective to develop the use of recycled nutrients in Organic Farming and to engage actions to facilitate this by clarifying principles of acceptability.
- “Reflections paper” on recycled nitrogen in Organic Farming (FiBL)
- develop proposals on use of conventional manures in recycled nutrient products for Organic Farming (including aquaculture sludge, insect frass)

EU Fertilising Products Regulation

Progress 2023 and ongoing

- **ABPs and manure:**
 - SANTE Delegated Act defining EU fertiliser 'End-Points' for Processed Manure and certain Cat2-3 ABPs [published in OJ](#)
 - GROW amendment to integrate Processed Manure into CMC10 draft ([public consultation](#))
 - COM [study](#) for integrating other Cat2-3 ABPs to CMC10 launched
- **[FAQ](#) guidance – ongoing updates**
- **COM [study](#) on additional materials for CMCs (2 years)**
 - sewage biochar included
- **First CE-mark obtained for struvite – Module D Conformity Assessment completed (Ostara)**
- **Delegated act on digestate post-processing - published [13/9/2022](#)**
- **Consolidated versions online [16/3/2023](#)**

Cat1 Animal By-Product ash

Currently excluded from use in EU fertilisers

DG SANTE will consult EFSA -> need to prepare input

ESPP webinar 22nd May 2023 with industry, authors US studies, scientists with work underway

- conclusion: no feasible way to prove absence of prions in ash
- develop dossier based on epidemiological evidence:
 - incidence of BSE and CJDv
 - demonstrated safe use of ash in UK (and elsewhere ?)
 - handling of ash in ABP Cat1 incinerators ?

Definition of “Bio-Based” nutrients

Definitions, methodology for assessment, standards for:

- ❖ “Bio-Based Fertiliser”
- ❖ “Bio-Based Nutrient” (e.g. industrial applications of P)
- ❖ “Nutrient of solely biological origin” (as in EU Fertilising Products Regulation PFCs)
 - DG GROW workshops on “Bio-based standards” 10/5/23, 29/9/23
 - Existing “Bio-Based” standards (CEN *, ISO) are based on C¹⁴
 - e.g. for “Bio-Based Plastics”
 - ESPP working meeting (Brussels & hybrid, [18th January 2024](#))
 - **objectives: finalise [joint position](#), develop proposals to CEN**

E.g. CEN European Standard [EN 16575](#) “Bio-based products: vocabulary”

Industrial Emissions Directive – BAT BREFs

<http://eippcb.jrc.ec.europa.eu/reference/>

- **Proposed IED update (underway) aims to widen to “material efficiency and reuse”**
 - proposes to extend to nearly all livestock production (c. 20 000 farms today -> up to c. 185 000)
- **Struvite P-recovery included in draft Slaughterhouse BAT update**
- **Inorganic Chemicals BREF update underway**
 - includes Large Volume LVIC Ammonia, Acids and Fertilisers (LVIC-AAF)
 - current BAT BREF = 2007
 - revision running 2022-2026
 - data collected on energy, raw materials -> ‘Key Performance Indicators’ (legal consequences)
 - “emerging technologies” will be considered, may include P and N recycling

ESPP actions on Nitrogen Recovery

Successful workshops: 19th January ([SCOPE Newsletter N°145](#))
and 7th June ([SCOPE Newsletter N°148](#))

Summary of research ([SCOPE Newsletter N°147](#))

Presentations made:

- Fertilizers Europe,
- EU Fertilisers Expert Group,
- NH3Event
- IFS ...

ESPP conclusions on Nitrogen Recovery

NH₃ stripping (esp. digestate) operational and developing

Recovered aqueous solutions - e.g. ammonium sulphate solution

Inadapted for industrial recycling (unless industry user site nearby)

- **transport costs** (<10% N_{recovered}/wet weight)
- **water content** (energy consumption in granulation)

Local use (as solution)

or local reprocessing (to organo-mineral fertilisers for regional markets)

Other local routes:

- **plasma treatment**
- **biomass production**



**Photo: Nijhuis Saur ByoFlex,
treating 80 m³/hr digestate
producing ammonium sulphate solution
(8.5 % N/ww)**

www.phosphorusplatform.eu/Scope145

ESPP conclusions on Nitrogen Recovery

Information gaps:

- **Industrial feasibility of recovery as ammonia gas** (e.g. via zeolites, geopolymers or ionic liquids) or as solid N product ?
- **From chimney NO_x - N_2O removal (conversion to N_2) to N-recovery ?**
- **Potential (quantities, rates) N-recovery from waste water (cf. UWWTD)**
- **Viability of recovery as ammonium carbonates (e.g. CCm)**
 - how to ensure stability (loss of CO_2 and NH_3 in storage and use)
- **Development of other routes**
 - **EasyMining Aqua2N** (currently produces 2%N/ww ammonium sulphate) solution
 - ion exchange or other routes for nitrate recovery from liquors



*Photo: EasyMining Aqua2N process
EU LIFE Re-Fertilizer project
demonstration unit*
www.phosphorusplatform.eu/Scope145

Meetings 2024

ESPP meetings 2024

see www.phosphorusplatform.eu/events



- **16-17 January 2024:** Brussels & online - **SOFIE3** with Eurofema, Fertilizers Europe
- **18 January 2024:** Brussels & online - **“Bio-Based” nutrients** - standards & definitions
- **28-29 February 2024:** Warsaw - **CRU Phosphates 2024** – ESPP panel session “Towards sustainable fertilisers”
- **12-14 March 2024:** Brussels & online - **Nutrient recycling policy**
 - targets for nutrient recovery under the UWWTD revision
 - policy tools to support market pull for recycled nutrients
- **16-17 April 2024:** Brussels & online – **NERM**
Nutrients in Europe Research Meeting –
(with Fertimanure, Lex4Bio, Walnut, Sea2Land, Rustica)
- **8-10 October 2024:** Ledia, Spain - **ESPC5**
5th European Sustainable Phosphorus Conference

Defining “Bio-Based Fertilisers” and FPR “solely biological origin”

18th January 2024
Brussels & hybrid



Meeting in Italy TBD 2024 ?

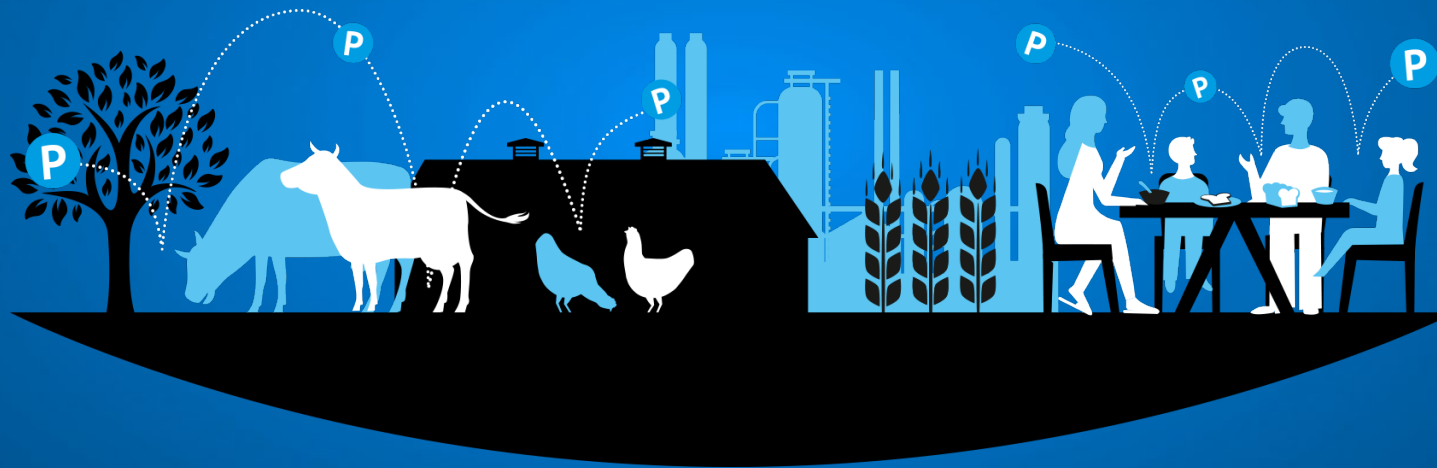
– manure treatment ? – Nitrates Directive / Renure ?

ESPP members





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