Paysage énergétique et hydrique bruxellois : innovation, régulation et perspectives d'avenir

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Brussels energie- en waterlandschap: innovatie, regulering en toekomstperspectieven

brugel

L'énergie et l'eau en confiance
Energie en water met vertrouwen

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brugel
Energie en water met vertrouwen

Préparer le Bruxelles de demain

Bouwen aan het Brussel van morgen

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BRUGEL

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Préparer le Bruxelles de demain

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Bouwen aan het Brussel van morgen

Pascal Misselyn - Karine Sargsyan

15/09/2026

brugel

L'énergie et l'eau en confiance
Energie en water met vertrouwen

Les questions qui façonneront Bruxelles demain

Comment réussir la transition climatique tout en préservant l'accessibilité des services essentiels ?

Comment financer les infrastructures dont Bruxelles a besoin ?

Quelles décisions devons-nous prendre aujourd'hui pour préparer la Région de demain ?

De bijdragen van BRUGEL

Onze belangrijkste hefbomen

- Adviezen aan de overheden
- De tarifering
- De investeringsplannen
- Het technisch reglement en de algemene voorwaarden
- De opvolging en controle van monopolistische en commerciële operatoren

Een overtuiging:

geen van deze hefbomen volstaat zonder de betrokkenheid van:

- De overheden
- De operatoren
- De commerciële leveranciers
- De innovatieve actoren
- De consumenten en gebruikers

Premier levier : la tarification

La tarification doit permettre de financer les infrastructures et d'assurer la qualité des services.

Elle doit tenir compte **des besoins de décarbonation et œuvrer pour la résilience des infrastructures.**

Les tarifs sont aussi des signaux pour une utilisation plus efficace des réseaux et la réduction des pointes.

Décisions clés de BRUGEL en matière tarifaire

Énergie

- **Coûts additionnels**
- **Tarification capacitaire renforcé** en 2028.
- **Plages horaires en 2030**

Eau

- **Méthodologie tarifaire** qui soutient les investissements
- **Structure tarifaire ajustée (terme fixe)**

Messages clés

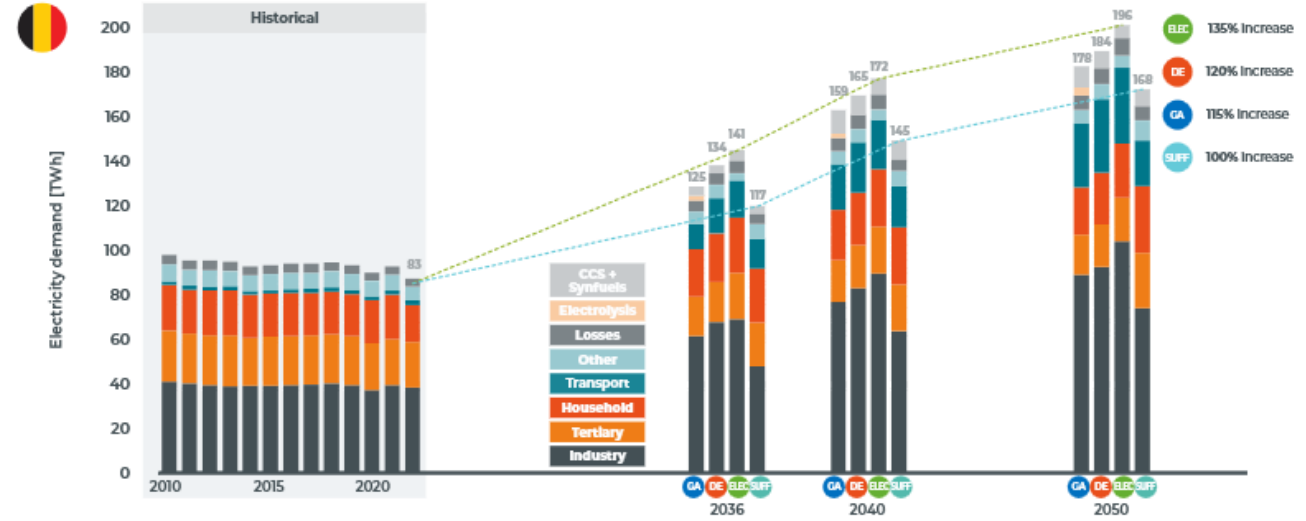
L’abordabilité des tarifs des clients d’aujourd’hui et de demain doit rester au centre d’attention de tous les acteurs.

BRUGEL plaide pour le renforcement des aides sociales, le développement et l’inclusivité du partage et un cadre propice à la concurrence du marché.

Deuxième levier : la planification des investissements

Energie

BELGIUM'S ELECTRICITY DEMAND IN EACH OF THE DIFFERENT SCENARIOS — FIGURE 3-29



Source: ELIA, BELGIAN ELECTRICITY SYSTEM BLUEPRINT FOR 2035-2050
https://www.elia.be/en/newsroom/2024/09/20240924_elia-publishes-blueprint-for-the-belgian-electricity-system-2035-2050

Deuxième levier : la planification des investissements

Eau

Table 3 - Additional cumulative capital and total expenditures required by 2030 in the EU-27 per country

Country	Additional capital expenditures required by 2030 (cumulative)	Additional operational expenditures required by 2030 (cumulative)*	Additional total expenditures required by 2030 (cumulative)
Austria	€2.2 billion	€2.30 billion	€4.5 billion
Belgium	€3.3 billion	€3.30 billion	€6.6 billion
Bulgaria	€2.3 billion	€3.10 billion	€5.4 billion

Source: WaterEurop, Socio-economic study on the value of the EU investing in water
https://watereurope.eu/wp-content/uploads/2024/10/Water-Europe-Socio-Economic-Study-1.pdf

Messages clés Énergie

La transition énergétique a besoin d'une vision politique claire sur le long terme pour orienter les investissements et sécuriser les acteurs.

Chaque année d'incertitude augmente le risque de retard, de surcoût et de mauvais dimensionnement des réseaux.

Les couts liés à la transition énergétique doivent être chiffrés.

Une transition équitable suppose un financement partagé entre les clients, les actionnaires et les pouvoirs publiques.

Les gestionnaires des réseaux doivent se coordonner et planifier ensemble pour garantir la cohérence de l'ensemble du système énergétique.

Le réseau de demain ne se planifie plus sur base d'un consommateur moyen, mais à l'échelle des quartiers, des rues et des usages réels.

Les données issues des compteurs intelligents sont la clé pour construire un réseau plus ciblé, plus efficace et moins coûteux. La flexibilité devient essentielle.

Kernboodschappen: Water

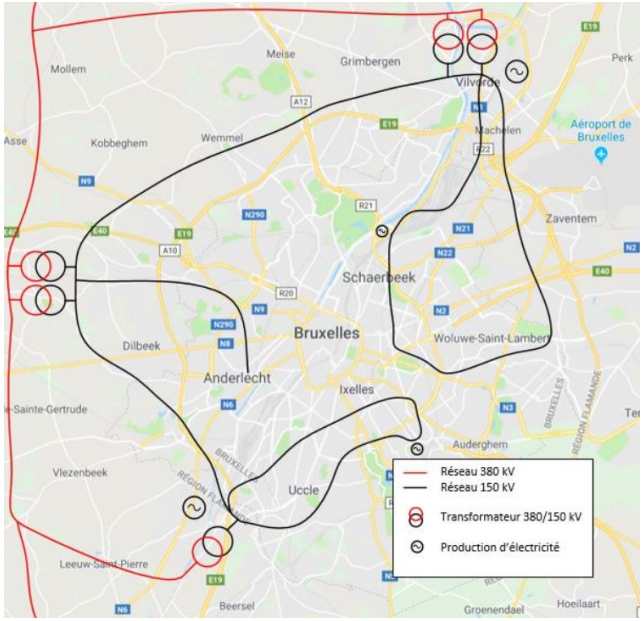
Financiering van de operatoren: naar een duurzaam en evenwichtig model

Oproep tot een evenwichtige bijdrage van gebruikers, aandeelhouders (de gemeenten) en het Gewest om de financiële stabiliteit van de sector te waarborgen. De consument moet bijdragen, maar mag niet meerdere keren betalen voor dezelfde investering. BRUGEL zal daarover waken!

BRUGEL heeft zich ertoe verbonden het MFC-mechanisme in de volgende tariefperiode af te schaffen

Afschaffing van het verbod in de ordonnantie op de waardering van historische investeringen, ter ondersteuning van de investeringscapaciteit van VIVAQUA.

Derde hefboom : congestiebeheer en nettoegangsregels



Bron: Investeringsplan 2022-2032 voor het Brussels Hoofdstedelijk Gewest

Brussel wordt via een beperkt aantal toegangspunten voor elektriciteit (Bruegel, Verbrande Brug, Drogenbos enz.) bevoorraad en is sterk afhankelijk van het bovenliggende net van Elia.

Brussel kent een hoge elektriciteitsvraag, terwijl het zelf weinig hernieuwbare energie produceert. De welvaart van het Gewest hangt daardoor rechtstreeks af van netcapaciteit, die een steeds schaarser wordende hulpbron is.

Messages clés

La capacité du réseau est devenue une ressource stratégique : il appartient aux pouvoirs publics d'en définir les règles de partage et de priorité. L'équité de la transition passe par des règles d'accès transparentes, assumées politiquement et fondées sur l'intérêt général.

Une Région qui importe l'essentiel de son électricité ne peut rester spectatrice des décisions qui conditionnent son accès à la capacité. L'accès à la capacité de la Région doit être garantie.

La sécurité hydrique est également un enjeu majeur pour notre Région dans un contexte de dérèglement climatique.

La réponse de BRUGEL aux questions structurantes

Anticiper plutôt que subir :
telle est la responsabilité collective qui permettra de garantir aux Bruxellois une transition durable, abordable et sécurisée.

La transition énergétique : oui, mais à quel prix et qui paie ?

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De energietransitie: ja, maar tegen welke prijs en wie betaalt?

Estelle Cantillon
FNRS - ULB

ULB UNIVERSITÉ LIBRE DE BRUXELLES

Transition énergétique: oui, mais à quel prix ?

Estelle Cantillon

Septembre 2026

DEMANDFLEX

Financed by the Federal Energy Transition Fund

economie

How much investment ? The CAPEX-FLEX trade-off

Cost of transition:

25 to 11 bn EUR per year in additional investment, whether we rely on technology only or also on behavior

Distribution grid central to transition, must be developed concurrently with decarbonization, electrification and digitalization

Innovation (including demand mgt) can reduce investment needs by 18%

Home version:
Plan de développement 2026-30 and Brugel's avis 408

- Big increase in investment needs by 2028 to accommodate increasing electrification
- Question raised about the way increased flexibility could reduce those

Costs and support costs: The role of non-financial barriers

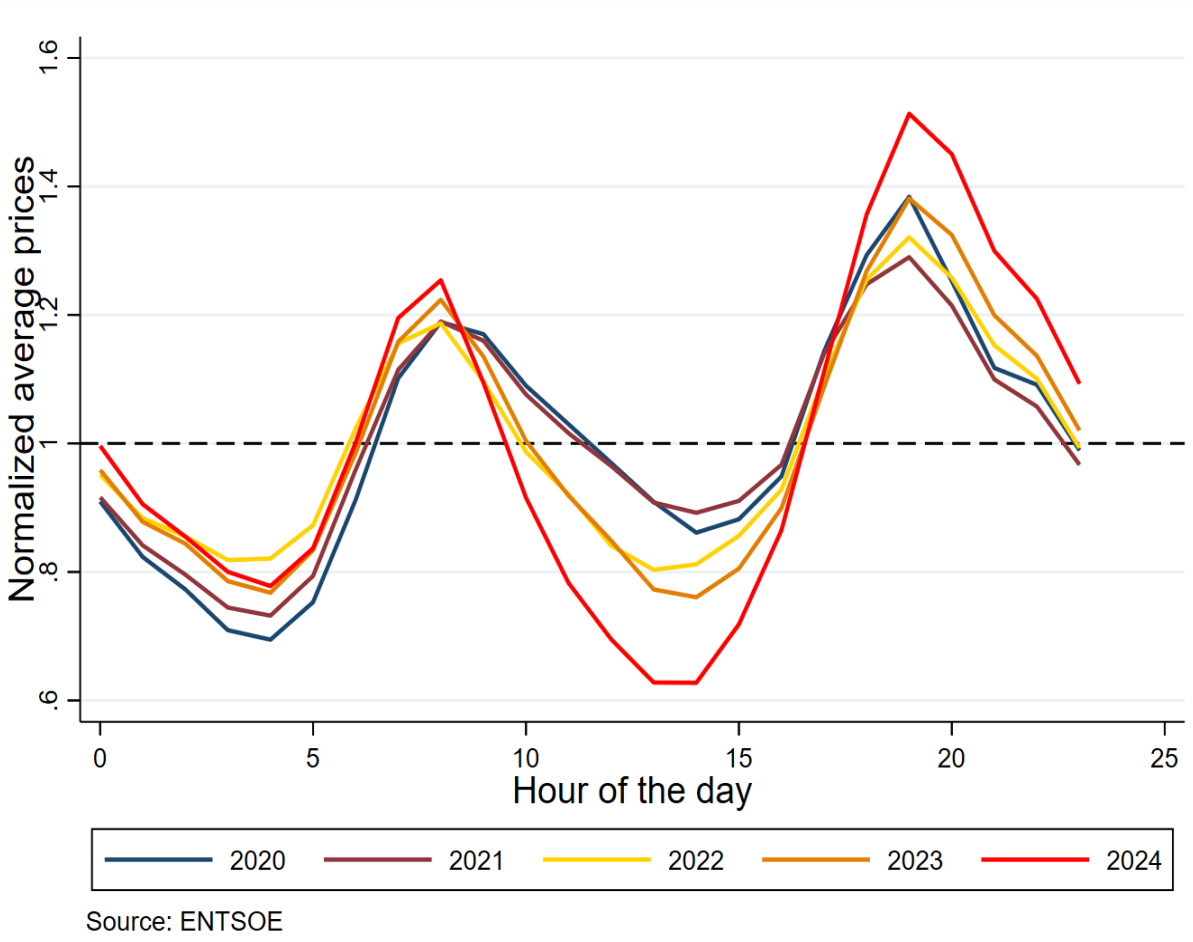
Models produce best-cost scenarios. Don't tell who makes the investment and what drives them. Realized costs often larger.

Financial barriers to private investment	Non-financial barriers to private investment
Price distortions – incl. fossil fuel subsidies	Information and access to expertise
Budget constraints	Administrative complexity and transaction costs
Risk and long-pay-back horizons	Behavioral biases (inertia, short-sighteness)
Split incentives	

Essential to reduce these barriers as well --- policy package

Solutions include co-financing, third-party investor / risk-sharing, information desks (facilitateurs), nudges, ...

The need for demand-side flexibility



Source: ENTSOE

Increased penetration of renewables requires a **change of paradigm**: demand must follow supply

Price signal ensures behaviors respond to market conditions & promotes efficiency (reduction of costly generation)

Limits to dynamic pricing and alternatives

Consumers under dynamic pricing schemes have an incentive to consume when wholesale prices are high

- Valuable for consumers with shiftable loads

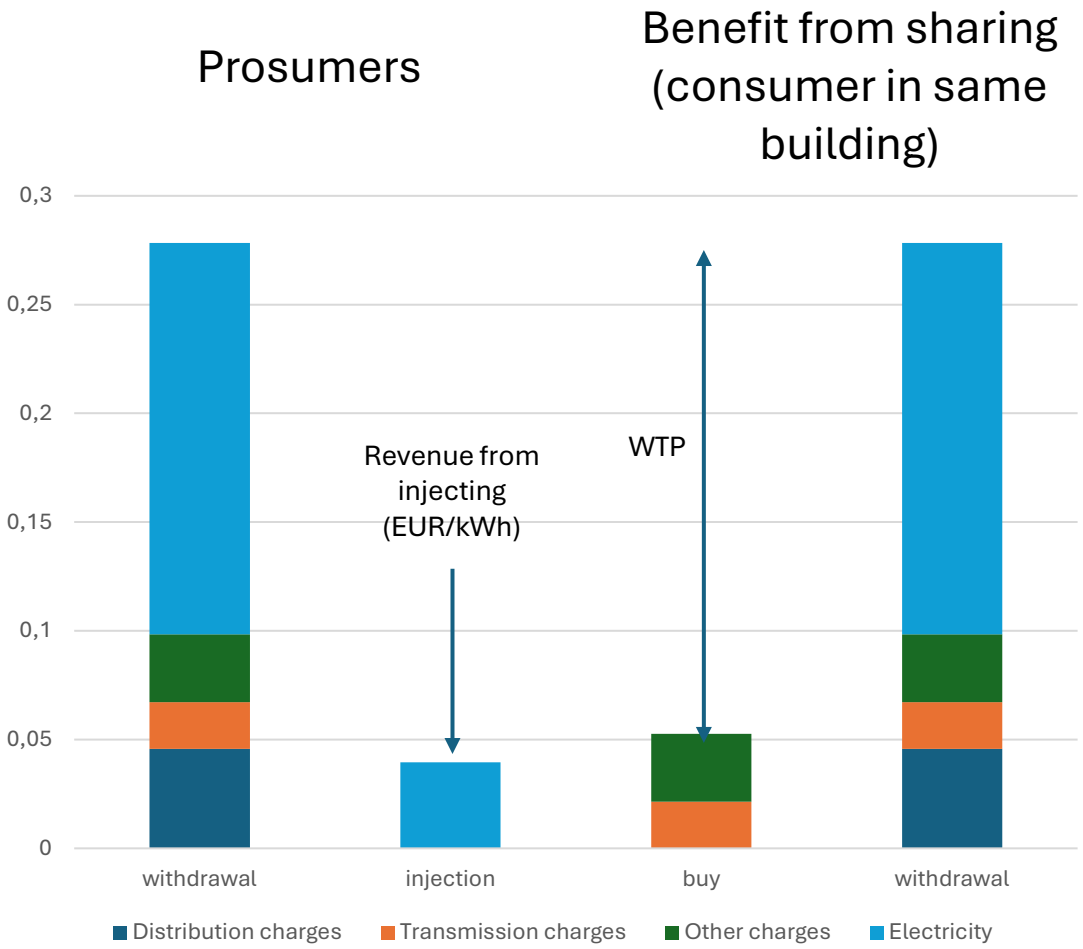
Load shifting creates positive benefits to the network and other consumers:

- Peak reduction
- Lower average wholesale prices → a benefit to all

Issue: Risk aversion as a barrier to dynamic pricing

Alternatives (tariff innovation): ToU, caps on peak prices, hedge for price levels. Need to make sure retailers have an incentives to offer those contracts.

Energy sharing: Sharing the benefits of the transition

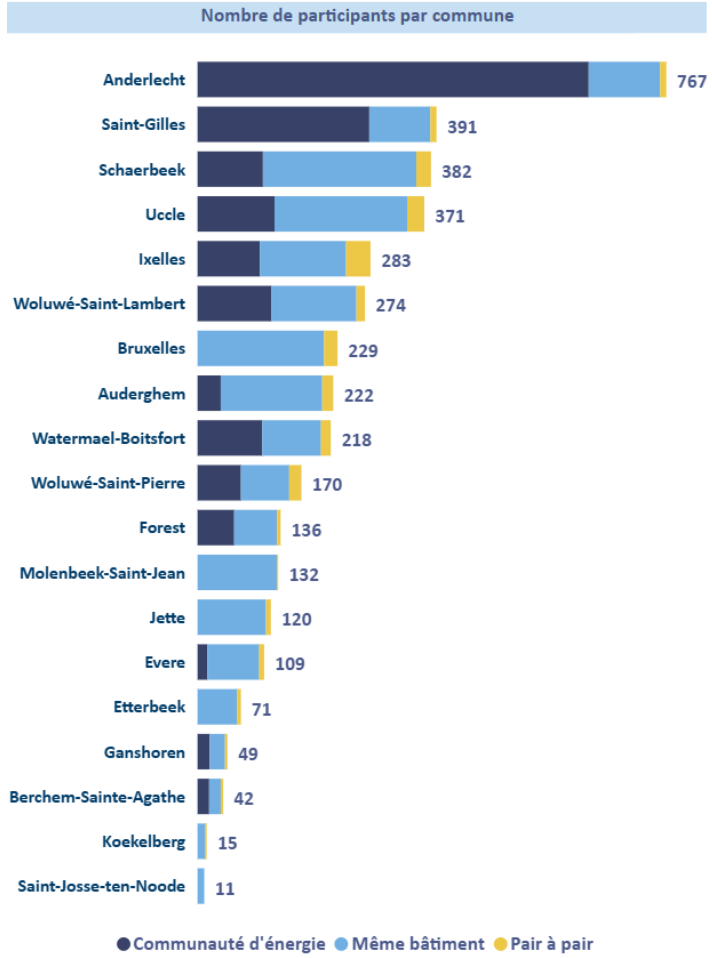


Data sources: Sibelga and Brugel

Current energy-sharing participants: 3 992 (< 1% of households)

Nb of PV installations: 29 145

Energy sharing enables non-investing households to benefit from lower electricity prices.



Reinforcement cycles in energy sharing ?

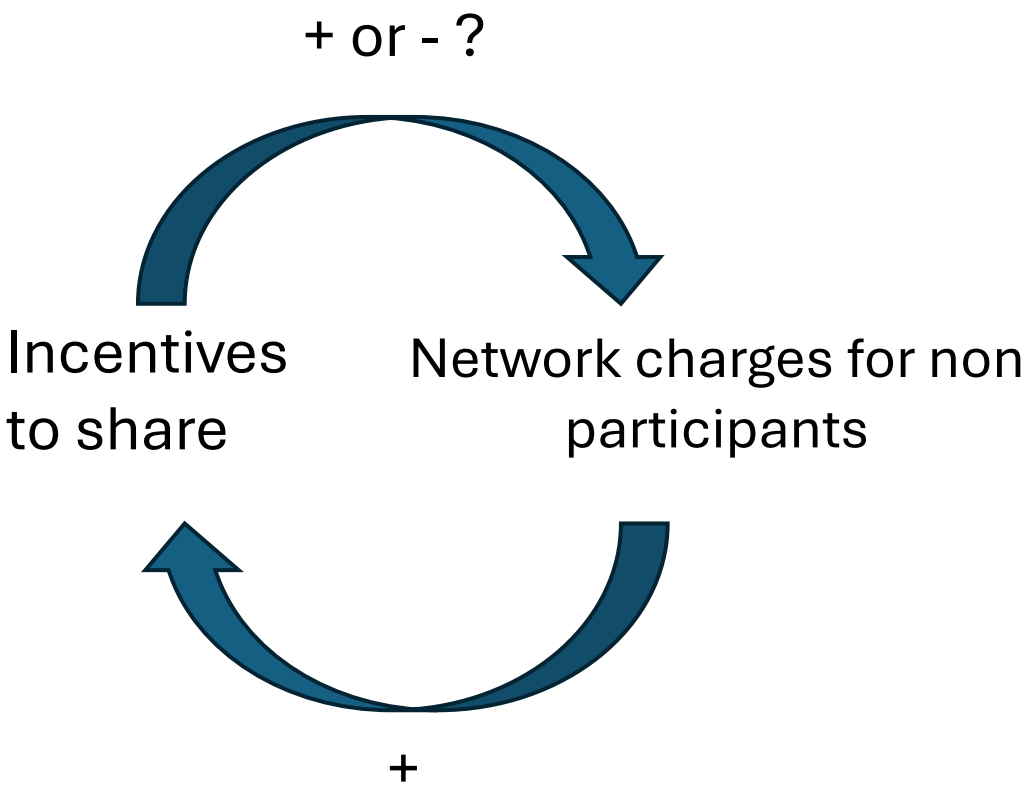
Consumers in sharing agreements have an incentive to consume when RES available

Potential benefits for the network:

- Reduced peak → lower investment needs
- Reduced congestion

When benefits are low, adopters create a negative externality on non-adopters

Reinforcement cycle exactly present when benefits are low → essential to ensure participation by vulnerable consumers + encourage behavioral change



Funding mechanisms

Investment in public infrastructure

Largely funded by energy invoice (cost recovery principle) – can this be compensated by higher volume or lower energy prices ?

Cost-reflective pricing can encourage virtuous behavior that reduces investment needs (end of net-metering)

Tap into Clean Energy Investment fund for transition investment

Investment in private equipment (solar PV, batteries, EVs)

Make private investment profitable without extra financial support

- Reduce non-financial barriers
- Reduce fossil fuel subsidies
- Increase returns to investment (energy sharing)

Leverage **Social Climate Fund** (~220 ml 2026-32 for Brussels) to reduce fossil fuel dependency of vulnerable households (e.g. renovation and energy retrofit of social housing)
-- Avoid direct support

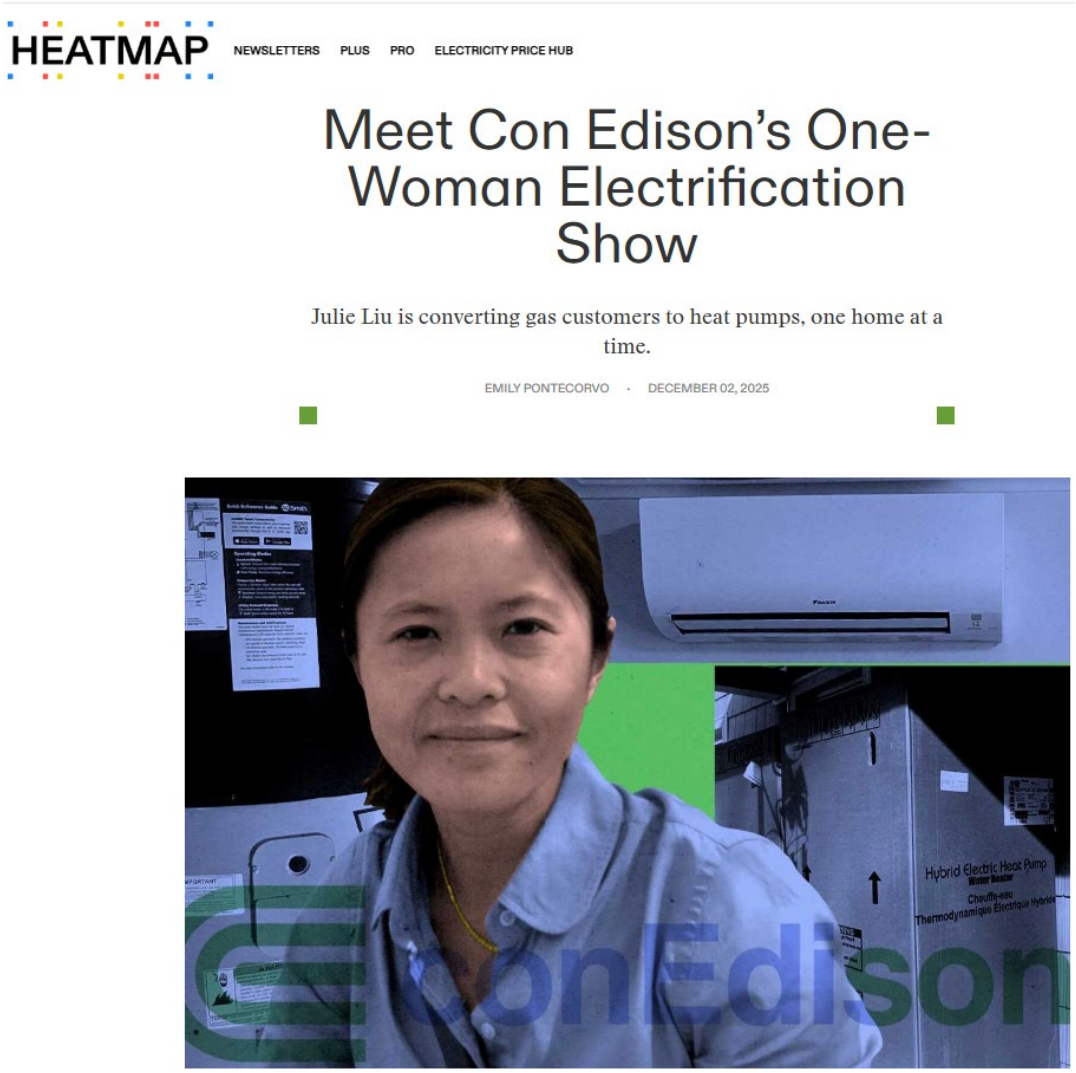
Reduce investment needs in gas while electrifying

Combined gas and electricity utility model has advantage in transition

Example: Electric advantage program (Con Edison, US):

Based on CBA: gas repair / maintenance vs. electrification

Utility pays for full electrification investments (from heat pump to induction cooking & insulation)



Source: https://www.oru.com/en/save-money/rebates-incentives-credits/new-york-customers/electric-advantage

Key messages

Cost of transition will be lower if consumers are flexible = our collective challenge

Systemic challenge requires coordination

Utilities, businesses and regulators have each their roles, need to work hand-in-hand for sequencing and align incentives

Prioritize inclusive-by-design rather than add-on compensation to deal with redistributive aspects

Eau : comment financer un service essentiel face aux défis de demain ?

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Water: hoe financieren we een essentiële dienstverlening in het licht van de uitdagingen van morgen?

Milo Fiasconaro
Aqua Publica Europea

EUROPEAN ASSOCIATION
OF PUBLIC WATER OPERATORS

Aqua Publica Europea

The European association of public water operators

aqua publica europea

EUROPEAN ASSOCIATION OF PUBLIC WATER OPERATORS

A European network of public water operators

74 MEMBERS

Public water and sanitation operators

100 MILLION

Citizens served every day

17 Billion €

Aggregated turnover

2 MAIN OBJECTIVES

- *Promoting public management*
- *Providing a platform for mutual learning*

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The investment gap in Europe

- **OECD/European Commission study 2020:**
  - **≈ 30 bln €/year = +25% current capital expenditure**
    (to achieve compliancee forUrban Wastewater Treatment Directive, Drinking Water Directive and Floods Directive)

- **European Commission assessment 2025:**
  - **23 bln €/year = +40% current capital expenditure**
    (mainly on UWWTD, DWD and FD)

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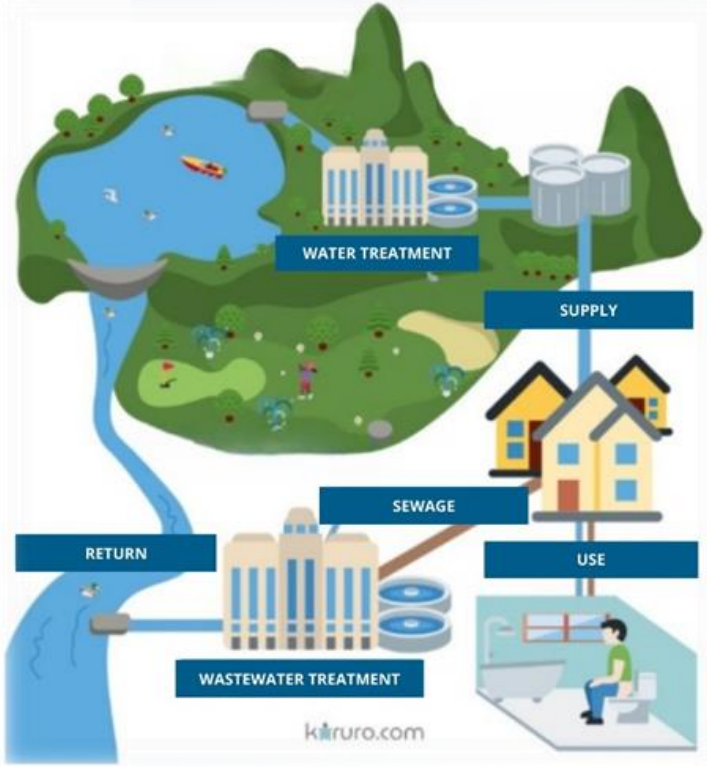
The evolving mission of public operators: from Service Providers to Resource(s) Managers



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The new mission of water utilities – the EU framework

Requirement	Reference
Monitoring and risk management in extraction areas	Art. 8, New Drinking Water Directive (2020/2184)
Promotion of access to water	Art. 16 and 18 (2020/2184)
EU-threshold for leakage	Art. 4.3 (2020/2184) (and mentioned in the Water Resilience Strategy)
Increased treatment levels	Art. 7 and 8, New Urban Wastewater Directive (2024/3019)
Energy neutrality requirement	Art. 11, 2024/3019
Phosphorus/nitrogen recovery targets	Art. 20, 2024/3019; future Circular Economy Act (?)
Targets for rainwater discharge/integrated urban plans	Art. 5, 2024/3019
Promotion of water reuse	Regulation 2020/741 and Art. 15, 2024/3019
Risk management for protection and resilience of critical infrastructure / Cybersecurity	Critical Entities Resilience Directive (2022/2557), Art.12-15 / NIS2 Directive (2022/2555)

A key question...

What is to be financed exactly?

...

The provision of a good?

An essential service?

A series of environmental services?

A societal infrastructure to preserve and defend?

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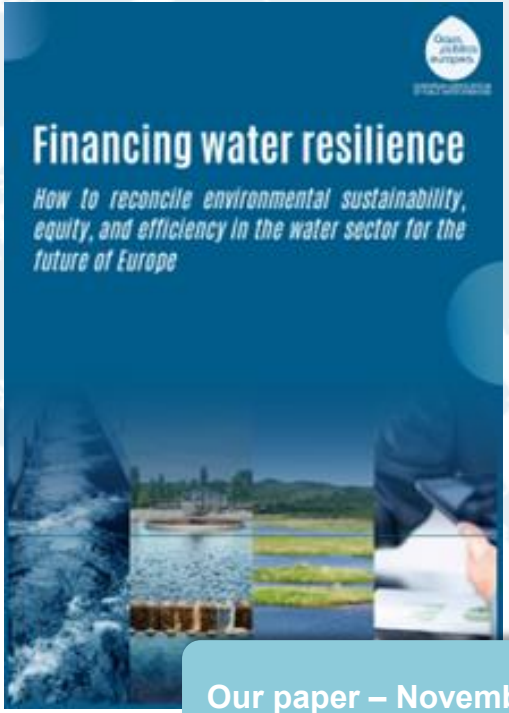
Our work on “Financing Water Resilience”

Seminar in the European Parliament – April 2025 (with Commission, EIB, OECD, Regulators…)



Our paper – November 2025

EUROPEAN ASSOCIATION OF PUBLIC WATER OPERATORS

1) The need for *smarter* tariffing approach

The balance between the **“fix” and “variable**” components of water tariffs should be recalibrated, especially for certain categories of users, to better reflect the relation between the benefits they derive from the access to the service and their financial contribution.

Examples

- Holidays houses
- Seasonal business activities

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2) Extending...the Extended Producer Responsibility (EPR) scheme

The **EPR mechanism**, already included in the Urban Wastewater Treatment Directive, should be extended to **drinking water**. This is essential to ensure a fairer redistribution of depollution costs among users, to incentivise the development of healthier and more environmentally sustainable products and, last but not least, to guarantee the proper functioning of the internal market.

Examples:

- PFAS levy in France (100€/100 grams discharge)

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3) Complementing the 'Polluter-Pays Principle' with the 'Beneficiary-Pays Principle'

Water operators can generate environmental benefits through the management of water resources. These benefits should be financially rewarded by **beneficiaries**. Approaches such as the OECD's 'land-value capture' or economic compensation schemes for water reuse and aquifer recharge should be promoted.

Examples:

- OECD 'land-value capture' (to be applied to land developers)
- "Remediator Benefits Principle" proposed by Malta's water authorities (for utilities doing aquifer recharge/water reuse)

4) Financing the Commons: it need not be a tragedy

Many of the interventions that operators carry out to strengthen resilience (e.g. restoring river morphology, reducing soil sealing, creating wetlands) have the characteristics of **public goods**. Financing this is complex but not impossible:

Examples:

- Ring-fenced taxes (Rainfall tax in Germany; GEMAPI in France; Water authority Tax in the Netherlands)
- “Public” insurance funds (“Fond Barnier” in France)
- Nature credits

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5) The good financial companion: strengthening the role of public banks

Water investments are typically low risk, low return, and characterised by long payback periods. This profile limits their appeal to many private investors. In this context, the role of **public banks** is essential and must be reinforced.

Examples:

- European Investment Bank
- De Nederlandse Waterschapsbank: “a bank of and for the public sector”

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6) Ensuring ‘water solidarity’: a condition for European cohesion

The cost of providing water services and ensuring resilience is highly context-dependent and variable across territories. Beyond social measures to ensure universal access to water, **territorial solidarity** mechanisms are also needed to ensure territorial cohesion. These should operate at different geographical scales.

Examples:

- “Equalization” elements in Italian tariffing methodology
- EU Structural Funds (or what will remain...)

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Will this be enough?

It depends...

- We need to work on the sources of funding but also the **sources of costs**...
- We need to clarify what **political objectives** we assign to the water sector, as different objectives may require different funding mechanisms