

Smart Finance for the Water & Energy Nexus

EnR Study Presentation & Roundtable

Berlin, March 28, 10h00 - 11h40



10:00 – 10:20 EnR Study on Water-Energy Nexus Financing | Filipa Newton, ADENE

10:20 – 10:40 Case studies | The role of Energy Agencies in the Water-Energy Nexus

- Juliet Borg Sant | Policy Officer, EWA, Energy and Water Agency, Matla
- Kirsi-Maaria Forssell | Expert, Energy Efficiency Unit, Motiva, Finland

10:40 – 11:30 | Roundtable | The importance of financing the water-energy nexus towards energy-climate goals

- Sofia Santos | PhD, Sustainability Champion in Chief at Systemic
- Juliet Borg Sant | Policy Officer, EWA, Energy and Water Agency, Matla
- Kirsi-Maaria Forssell | Expert, Energy Efficiency Unit, Motiva, Finland
- Attending energy agencies

11:30 – 11:40 Conclusions and wrap-up | **Filipa Newton**, ADENE







European Energy Network

A voluntary network of European energy agencies

Filipa Newton



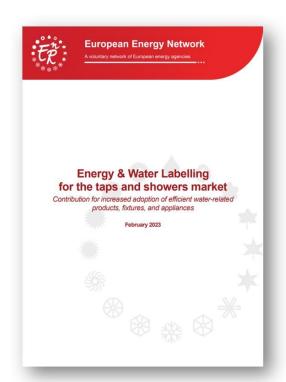
EnR Water-Energy Nexus Task Force Chair Coordinator of Sustainable Innovation ADENE, Portugal

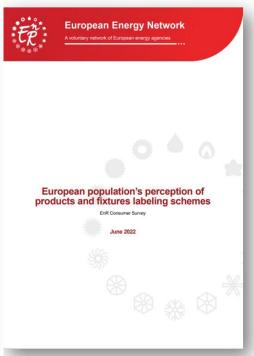


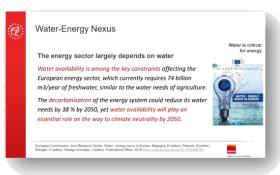
Task force | Main deliverables Feb 22 - Feb 23

EnR'22 Report on the European Consumer Survey findings and WG 1st Online

Workshop | Faia V., Cordeiro S., Newton F. (2023) *Energy & Water Labelling for the taps and showers market: Consumer Survey Report*, European Energy Network











Smart Finance for the Water-Energy Nexus







Smart Finance for the Water Energy Nexus Study Governance

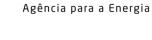


Steering Committee: ADENE, EWA, CRES, dena, ADEME, RVO















Surveys: SEDA, EIHP, MOTIVA, EST











Smart Finance for the Water-Energy Nexus

EnR'22 Study and Report – Water Energy Nexus Financing |



Malta Dias P., Costa C., Cardoso P., Sargento R., Batalha A., Cordeiro S., Newton F. (2023) *Smart finance on water&energy nexus: Benchmark and proposals on innovative financial mechanisms for cities and buildings*, European Energy Network

Internal presentation and discussion @ EnR M72 meeting

March 28, 09h30 – 12h30 | EnR Full Meeting & Water-Energy Nexus Financing Study Presentation

Smart Financing for the Water-Energy Nexus | Study Presentation and roundtable

10:00 – 10:20 | EnR Study on Smart Financing for the Water-Energy Nexus | **Filipa Newton**, **ADENE** 10:20 – 11:40 | Roundtable: The role of Energy Agencies in the Water-Energy Nexus

- Sofia Santos, PhD, Sustainability Champion in Chief at Systemic
- Case studies from EnR agencies | EWA & MOTIVA
- Wrap-up



SUSTAINABLE FINANCING

EU taxonomy – common language between investors, issuers, project promoters and policy makers

Investments that comply with technical screening criteria for one of the six environmental objectives, do-no significant harm standards for the other five, as well as a set of common minimum social safeguards, can be

communicated as "sustainable"

EnR agencies potential role



Financial intermediaries
that confirm the
"sustainable" investment
aligning with the EU
Taxonomy!

	Type of economic activity	Technical Screening Criteria to Climate Change M&A	
		Substantial contribution to climate change mitigation	Do-no-significant harm standards (water)
	Constructions of new buildings	 Primary Energy Demand of new construction is at least 10% lower than nearly zero energy building requirements in national measures. Energy performance certified by energy performance certificate. For buildings > 5000m2: life cycle global warming potential calculated, and level of performance is tested post construction, both disclosed to investors and clients. 	Technical specifications for water appliances are attested by product datasheets, a building certification or an existing
	Renovation of existing buildings	 As applicable in national regulations for major renovations Reduction of primary energy demand of at least 30%. 	product label in the Union (detailed in the study)



SUSTAINABLE FINANCING

Sustainable Finance Strategy



Standard for European green bonds (EuGB)¹²

- ✓ With these instruments green bond issuers can easily demonstrate that they are
 funding legitimate green projects aligned with the EU taxonomy.
- ✓ Investors buying the bonds will be able to more easily assess, compare and trust that their investments are sustainable, reducing the risks posed by greenwashing.

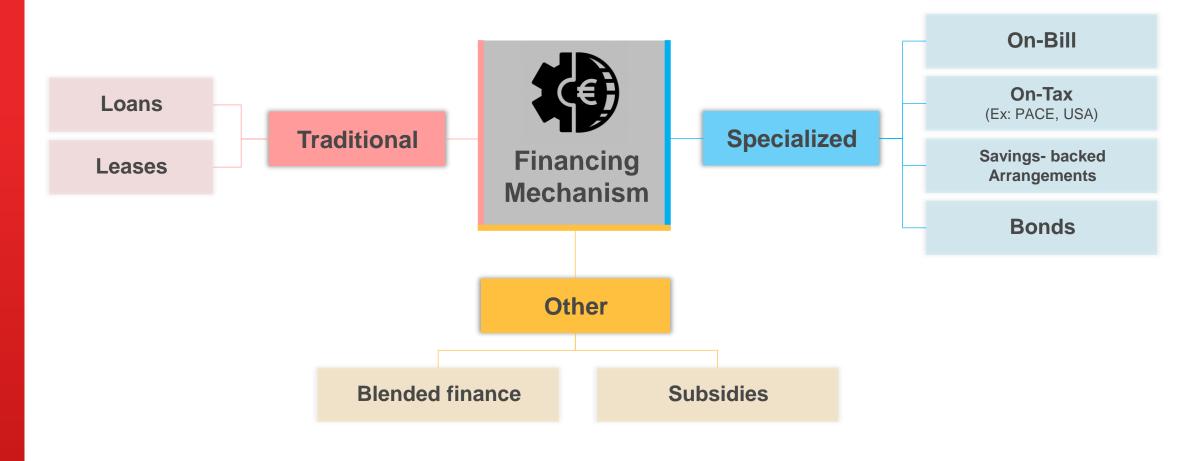


EnR agencies can contribute to:

- Include additional sustainable activities in the EU Taxonomy
- Extend sustainable finance standards and labels that support financing this transition
- Work on green budgeting and risk-sharing mechanisms
- Improve cooperation between authorities to monitor alignment of EU financial system with Green Deal
- Support low-and middle-income countries in their transition efforts to sustainable finance



Existing Financing Mechanisms





Survey Analysis Agencies' Roles on WE and WEN

Organizations' role

- ✓ 4 responding agencies work on WEN (ADENE,
 CRES, EWA and MOTIVA)
- ✓ WE audits and certification are offered by all, except
 CRES
- ✓ In Malta there are no other organizations working in WEN topics

Role in project finance

- ✓ All agencies work on post-financing monitoring
- ✓ ADENE, CRES and EWA work on policy design and tech specifications



Survey Analysis

Funding mechanisms on EE, WE and WEN

- ✓ Loans and Green Loans are the most used, and preferred mechanisms for all mechanisms in all countries.
- ✓ Service contracts and subsidies have some expression in EE and WEN, but not for WE.

- ✓ Leases and Climate bonds have no expression for EE, WE and WEN.
- ✓ Other instruments used for EE and WEN are cash grant and tax credits, but with little impact



Survey Analysis Barriers and solutions

Financing mechanisms

(loans, green loans, leases, bonds, etc)

Loans and Green Loans are thought to be the most efficient

Most efficient

- Subsidy levels may not be adequate for low-income households;
- Lack of information by funding entities and administrators;
- Lack of specific loans addressing water efficiency

Main Barriers More appropriate solutions based on information and specific needs must be adressed

Instruments that aid in the identification of eficiente products, as well as more Green Loans

Possible Solutions

- Create efficiency labels for water fixtures;
- Need for more green loans;
- Green loans addressing WE na WEN.



Survey Analysis

Barriers and solutions

Public funding mechanisms

(grants and subsidies)

Different funding solutions according to each country

Most efficient

- Household income tax deduction;
- Subsidies to businesses;
- Faster energy services (e.g., ESCOs);
- Environmental subsidies (co-funding);
- Smart and Sustainable Scheme.

- · Lack of personnel and know-how;
- Subsidy may not be adequare for low-incoe households;
- Low water tariffs to meet investment;
- Risk of proverty;
- · Change of the rules and lack ok prior info.

Main Barriers

Not enough resources and complex guidelines

Development of appropriate tools for the purchase of water-eficiente appliances and fixtures all types of households.

One-stop-shops to facilitate the access to funding solutions

Possible Solutions

- Create efficiency labels for water fixtures;
- Need for more green loans;
- Green loans addressing WE na WEN.



Conclusions

Benchmark analysis

Traditional financing mechanisms

'Green loans'

Can be adapted to cover WE, provided that a certification could be used to assess eligibility

'Green or Sustainability linked loans'

Should target at homeowners and property owners which helps borrowers and lenders by demonstrating eligibility and respective environmental impact arising from several certifications and improvements, including on water efficiency (Nabers)

Specialized Financing Mechanisms

'On-bill financing'

Great potential to help transition existing buildings to water and energy efficiency. Could provide a secondary business revenue for utilities, and a reduced up-front cost approach for small retrofits or for equipment replacement for consumers. (PACE)

'Energy performance contracts (EPC)'

Strong potential to be applied to water efficiency building renovations that can be measure and verified. A good 'Green bond' example is found in Finland, a green bond issued by MuniFin

'Subsidies'

Malta and Portugal, address water efficiency alongside energy efficiency. This example builds on primary energy reduction goals, to which water efficiency solutions must contribute, translating water savings into energy savings and CO₂ emission reduction. doesn't allow for single water efficiency applications, which is a topic to review in the future



Conclusions

Recommendations and guidelines

Energy Agencies can help to create, adopt, or adapt new or existing financing mechanisms

How?

- Expand their scope of action to water efficiency and WEN
- Technical assistance, confirming investment eligibility and their water and/or energy efficiency improvements, aligning with the EU taxonomy and monitoring efficiency gains.
- Manage and/or support product labelling
- Design and/or requirements definition for financing mechanisms
- Promote training, reskilling, and upskilling
- Promote technical and project development assistance facilities, like one-stop-shops
- Address and promote non financing smart incentives
- Develop tools and observatories to monitor their evolution and adoption





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Juliet Borg Sant



Policy Officer
EWA, Energy and Water Agency
Malta







ENR MEETING 27 & 28 MARCH 2023



Scheme Overview

Who is eligible

Amount Eligible/Disbursement

Interventions Criteria

Application Process

Supporting Documentation

Scheme Timeline

Contact Details

Eligibility for the Scheme

Voluntary Organisations (VO) as defined in Article 3 of the Voluntary Organisations Act (Cap. 492), and which are enrolled in terms of the same Act.

The VO must be **enrolled and compliant** with the Commissioner for Voluntary Organisations **on closing of the deadline of the application**.

Projects are to be implemented at **Premises that are used by the VO**, which need to be either:

- Owned by the VO;
- Government owned but leased to the VO or on empytheusis;
- Being rented by the VO for at least 10 years from the application or declaration for other legal arrangements;

Compliance of the VO will be verified with the support of the Council for the Voluntary Organisations during application review.

Eligible Amount/Disbursement

Eligible Cost

Euro 750 - Euro 30,000 (incl. VAT)

Grant amount shall cover 90% of the eligible cost up to Euro 27,000 (incl. VAT)

Pre-Financing 60% of Grant

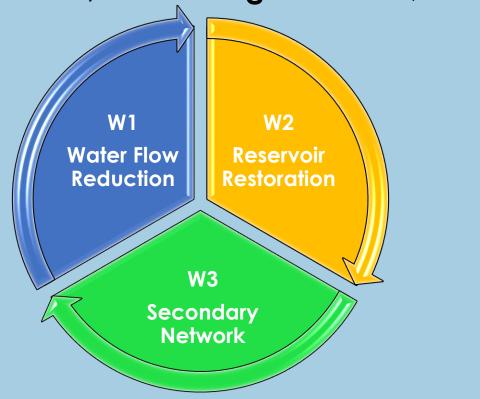
Final Claim
40% of Grant

VO must co-finance the project with 10% of the eligible costs.

Eligible Interventions

Projects aimed at increasing energy efficiency,

and/or reducing water use, and/or augmenting water supply





Water Efficiency and Supply Augmentation

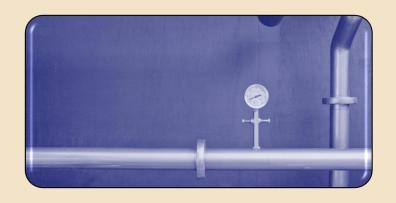
Energy Efficiency

Water Efficiency and Supply Augmentation

Refer to Section 4 of Scheme Rules







W1 - Water Flow Reduction

- Aerators/pressure reducing valves
- Sensor/timed faucets
- Dual flush toilets/flush valves

W2 - Reservoir Restoration

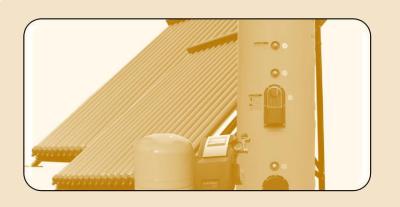
- Cleaning and repairs to existing wells
- Cleaning and repairs to existing reservoirs
- Cleaning and repairs to catchment areas

W3 - Secondary Network

- Pumps
- Controllers
- Pipe networks
- Storage Tanks

Energy Efficiency

Refer to Section 4 of Scheme Rules







E1 Water Heating

- Solar Water Heaters
 - Air to Water Heat Pumps

E2 – Equipment Efficiency

- Appliance replacement
- Variable speed drives
- Air to air heat pumps

E3 – Lighting Efficiency

- LED light fittings
- Passive sensors
- Dimming systems

Other Key Points

- Applicants can only apply for a maximum of 2 criteria per category, i.e 2 out of W1, W2 and W3 and 2 out of E1, E2 and E3;
- Interventions can only replace/add on to existing installations. New installations will be rejected;
- Projects must result in reduced energy/water consumption or water augmentation;
- Applicant must not have obtained any tax rebates/refunds for the interventions done, and cannot do so following implementation;
- Any costs incurred prior to the signing of a Grant Agreement or during the application process are not eligible;
- PV panels, consumables, maintenance work (except W2) and interventions effecting competition are not eligible;

Application Process

HOW do I apply?

A **representative of the VO** can apply for the scheme.

The representative should be someone of the committee that is registered with the VO Commissioner.

WHAT Interventions?

The list of interventions is limited only by the criteria.

Apply only for max. 2 out of W1,W2 and W3 and max. 2 out of E1, E2 and E3.

There can be any number of interventions under each of the criteria.

WHERE to apply?

Online only.

Access through Energy Water Agency website:

https://energywateragency. gov.mt/voluntaryorganisations-scheme/

Application Process



Collect Information

Read carefully the Scheme Rules and analyse the energy and water consumption of the VO. Get technical support to plan the actions that can be funded under this scheme.



Prepare Documentation

List of Interventions
Bank Details

- ID Card/Passport of representative;
- Utility bill in the name of the VO;
- Quotations for the interventions proposed;
- Technical Report.



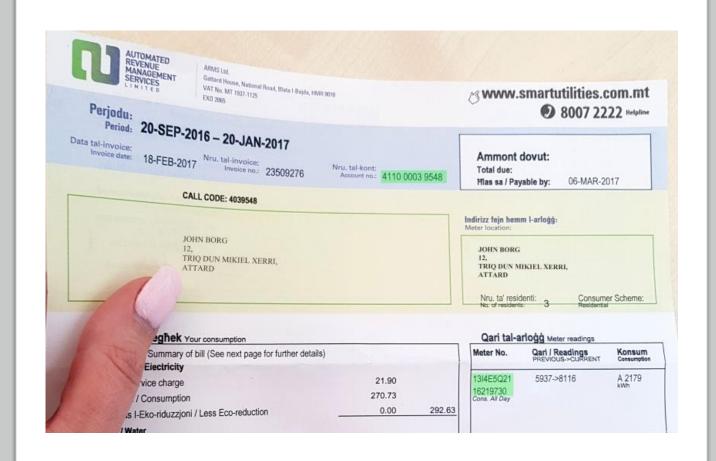
Submit Online Application

Online portal will be open during the application window. Applications will be ranked on a first come first served basis, subject to availability of funds.

Utility Bill

A copy of the ARMS bill for the premises where the interventions will be carried out that shows the VO as account holder and issued within the last 12 months.

Declarations may be submitted under certain circumstances.



Technical Report

To be filled in by a Warranted **Engineer/Perit**. The report must include all the interventions being proposed.

Report template is to be downloaded from EWA website and filled in as per guidelines in the template.

Report is to be filled in **properly or it** will result in the application being rejected.



SCHEME TO SUSTAIN ENERGY AND WATER EFFICIENCY WITHIN VOLUNTARY ORGANISATIONS - TECHNICAL REPORT

application of the above-mentioned scheme.

The information included in this report will determine the eligibility of proposed interventions under this scheme. This technical report must be prepared and signed by a Warranted Engineer as per scheme guidelines and also signed by the Applicant's

Each Section needs to be completely filled in, as per notes provided at the end of the template, any missing information not submitted may result in the proposed intervention or complete application being considered ineligible for the scheme

Section 1 - Voluntary Organisation Details

Name of Voluntary Organisation: VO Registration No:

Section 2 - Proposed Intervention Details¹

Description of Proposed Intervention: (short description)		
Category: (tick as appropriate)	☐ Water Efficiency and Supply Augmentation	☐ Energy Efficiency
Criteria Code/Description: (tick as appropriate)	□ W1 – Water Flow Reduction □ W2 – Reservoir Restoration □ W3 – Secondary Network	☐ E1 – Water Heating ☐ E2 – Equipment Efficiency ☐ E3 – Lighting Efficiency
Current installation: (detailed description)		
Proposed Intervention: (detailed description)		
Other: (describe as needed)		

Section 2 needs to be repeated for every proposed intervention and all the information under this section filled in as instructed at the end of this template.

Section 3 – Other Comments/Information



Section 4 - Compilation Details

Prepared by (Warranted Engineer):

are in line with the scheme objectives and aim to increase energy and water efficiency at the premises where these interventions will be carried out.				
Name:	_			
Warrant No:	_			
Date:	_			
Signature:				
Applicant Representative:				
Representative Name:				
Position within Organisation:				
Date:				
Signature:				

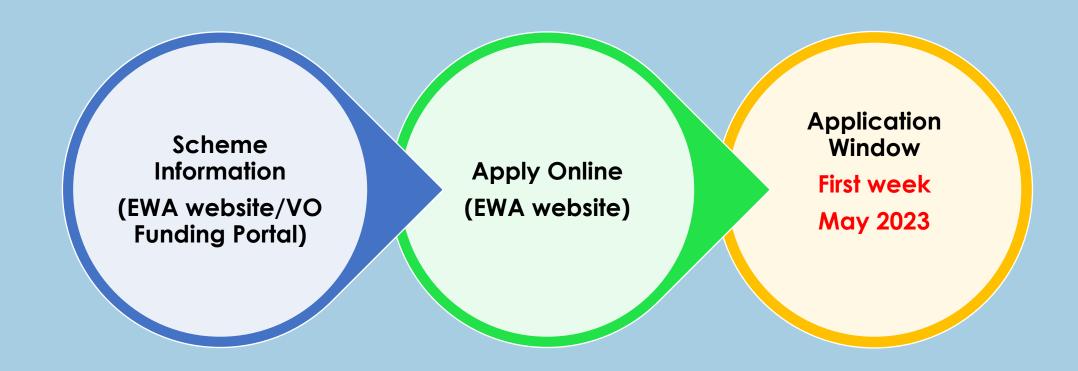
Technical Report Details

Section 2 – Proposed Intervention Details

Proposed Intervention:	Insert a description of the proposed intervention on the premises, as per guidelines below. These interventions should link to the descriptions given in the current installation section above:	
	W1 – Indicate what type of faucets/flush valves are going to be installed onto existing fittings or as a replacement, <u>quantities</u> and areas to be installed in.	
	W2 – Give information on works to be carried out on the existing well or reservoir. Provide information on expected volume it can reach once repaired.	
	W3 – Provide details of components that will be installed as part of the secondary water network, including water storage to be installed (if applicable), pump ratings, quantities, sizing, etc. Indicate intended use of the rainwater and details of expected amount of water to be used.	
	E1 – Include details of water heating technology, capacity and power rating that will be installed. If water capacity is increased, justification needs to be provided in the field Other further below.	
	E2 – Include details of appliances/drives, quantities, <u>capacities</u> and power ratings being proposed.	
	E3 – Include details of new light fittings technology, quantities and power rating or details of passive/active light control systems being proposed.	
Other:	Any clarifications on the information provided, justifications for increased capacities, etc. need to be written here.	

Description of Proposed Intervention:	The description here should be brief but give a clear idea of what is the intervention being proposed. This should match the description entered in the online application form. <u>E.g.</u> replacement of external light fittings; repair of well; replacement of washing machine; installation of secondary water network.
Category:	Choose between water and energy interventions by ticking.
Criteria Code/	Depending on the category chosen, select (by ticking) between W1, W2,
Description:	W3 or E1, E2, E3. Only a single option is acceptable here for each
	proposed intervention. Reminder: Applicants may propose any number
	of interventions under a maximum of 2 criteria per category in their
	application. (Only 2 out of criteria W1, W2, W3 can be chosen, along with
	2 criteria from E1, E2, and E3)
Current installation:	Insert a description of the current installations present on the premises as per guidelines below: $ \\$
	W1 - Indicate what type of faucets/flush valves are present, the quantities, areas where currently installed, etc. Indicate current flow rates of faucets/flushings. This can be achieved by monitoring the time to fill in a 1 litre measuring jug from faucets and then calculating flow rate in LPM (litres per minute). For flushing, physical size (to determine volume of water) and discharge timing can be used to estimate the flow rates in LPM. W2 - Give information on well or reservoir present at the premises.
	Indicate estimated volume of water that the well/reservoir holds, its diameter and accessibility. Indicate estimated volume of water being lost due to the present damage.
	W3 – Indicate volume of water that the well/reservoir holds and can be used if a secondary water network is implemented or provide details of water catchment areas that can be used and the surface type of these areas.
	E1 – Include details of existing water heating technology, <u>capacity</u> and power rating. <u>Provide also</u> information on amount of hot water being used and usage patterns. For gas water heaters indicate amount of fuel being used.
	E2 – Include details of existing appliances/motors present, quantities, <u>capacities</u> and power ratings. Provide age of appliances currently installed.
	E3 – Include details of existing light fittings technology, <u>quantities</u> and power rating. Provide details of where these are currently installed and usage patterns.

Scheme Timeline



^{*} Applications will close once available funds are exhausted



2229 2567



energywateragency.gov.mt/schemes



scheme.vo@gov.mt

Further Information

Contact Details









European Energy Network

A voluntary network of European energy agencies

Kirsi-Maaria Forsell



Expert, Energy Efficiency Unit Motiva, Finland



European Energy Network

A voluntary network of European energy agencies

Water Energy Nexus Workshop

Berlin | 28 March 2023





Finland Tackling Water Energy Efficiency



- Water Energy Efficiency in Finland is concentrated on the use and production of hot water:
 - Energy efficiency and renewables in heating water
 - Reducing consumption of hot water through user advice, efficient fixtures, etc.
 - Using the residual heat from wastewater
- Through energy renovation, households, housing companies, and other building owners are encouraged to reduce the energy used in heating water and also reducing the consumption of water, through reducing system pressure, and installing efficient fixtures.
- Subsidies are available, as well as other means of financing larger projects, such as enhancing energy efficiency of wastewater treatment.



Smart Finance, Financial Instruments



On-tax financing: Household Income Tax deduction

Energy Aid for Households, Housing Companies, Public Rental Properties and Municipalities

Ministry of Environment Subsidy for municipalities, publicly owned companies and businesses

Energy Aid for Companies and Municipalities

MuniFin Green Financing for Municipalities

Household Income Tax Deduction

home renovation labour costs eligible, increased if used for replacing oil-heating

Energy Aid for residential buildings (Housing Finance and Development Centre)
Renovation costs eligible, for e.g. pressure reduction and water-saving fixtures,
as well as better pipe insulation during pipeline repair.

Subsidy (Ministry of the Environment)
Utilizing the energy potential of urban wastewater
and improving the energy efficiency of wastewater treatment

Energy Aid (Business Finland)

Energy efficiency using new technologies, for e.g. utilizing waste heat in wastewater

MuniFin Green Financing

Green financing is available for for new and existing wastewater treatment plants, as well as new and existing water utilities. Set criteria, for e.g. improvement of energy efficiency by 20 % in an existing wastewater treatment plant.



Advice, communication



Consumer Energy Advice

Regional Energy Advisors

Down a Degree

Energy Audits

Voluntary Energy Efficiency Agreements

Consumer Energy Advice

Motiva and 11 regional organizations cover the whole of mainland Finland (all 18 regions). An energy advisor provides unbiased information about the means available to improve energy efficiency and the use of renewable energy. Advisory services are free of charge.

Domestic water heating and consumption is a key topic.



Down a Degree

Campaign targeting all citizens but also businesses, municipalities, public authorities. Aims to reduce energy use in the long-term, but especially during peak hours. The main target is reducing electricity consumption. Reducing warm water use is a campaign goal, as electricity is used to heat water, especially in many single-family homes.



Energy Audits, Energy Efficiency Agreements

Using energy audits to find savings potential.

Audits are eligible for energy aid.

Through the Energy efficiency agreements scheme businesses and municipalities are encouraged to full fill the savings potential, resulting in annual savings of 10.3 TWh (heat, fuels, electricity)





Water Energy Nexus | Finland



New technologies, new methods

Utilizing wastewater heat in district cooling

Utilizing wastewater heat in district heating In Turku, the energy producer extracts heat bound in waste water with a heat pump and produces district heating.

From water cooled in the heat pump, district cooling is produced.





In Helsinki, district heating and cooling comes from the world's largest heat pump plant, using purified wastewater, and district cooling network return water.

https://youtu.be/yje4IN498eo





Thank you!

Kirsi-Maaria Forssell

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Water Energy Nexus WG



Agência para a Energia

























Water Energy Nexus WG



Agência para a Energia







Filipa Newton





Ani Movsessiyan



Alessandro Fiorini



Vedran Krstulović



Mariana Simões



Brian Horne



Charalampos Malamatenios



Antoinet **Smits**



Sofia Cordeiro

Pedro Cardoso



Niroshini Bodinagoda



Georgia Vezyrgianni



Corinne van Voorden



Patrícia Malta Dias



Kirsi-Maaria Forssell



Stanislav Laktiš



Manuel Sapiano



Vanessa Faia



Jan Magyar





Thank you for your attention!

Water-Energy Nexus Working Group Chair

Filipa Newton

Sustainable Innovation Coordinator

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