

# PRISHTINA HEATSAVE

## DISTRICT HEATING METERING

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# BACKGROUND

Millennium Foundation Kosovo is the implementing entity of the \$49 Million Threshold Program agreed between the Government of the Republic of Kosovo and the Millennium Challenge Corporation.

Kosovo Threshold Program addresses two key constraints to Kosovo's economic growth: an unreliable supply of electricity; and real and perceived weakness in the rule of law, government accountability, and transparency

- Reliable Energy Landscape Project
  - Pilot Incentives on Energy Efficiency – \$20.6 million
  - District Heating Metering – \$10.9 million
  - Independent Power Producer Finance facilitation - \$5 million
- Transparent and Accountable Governance Project



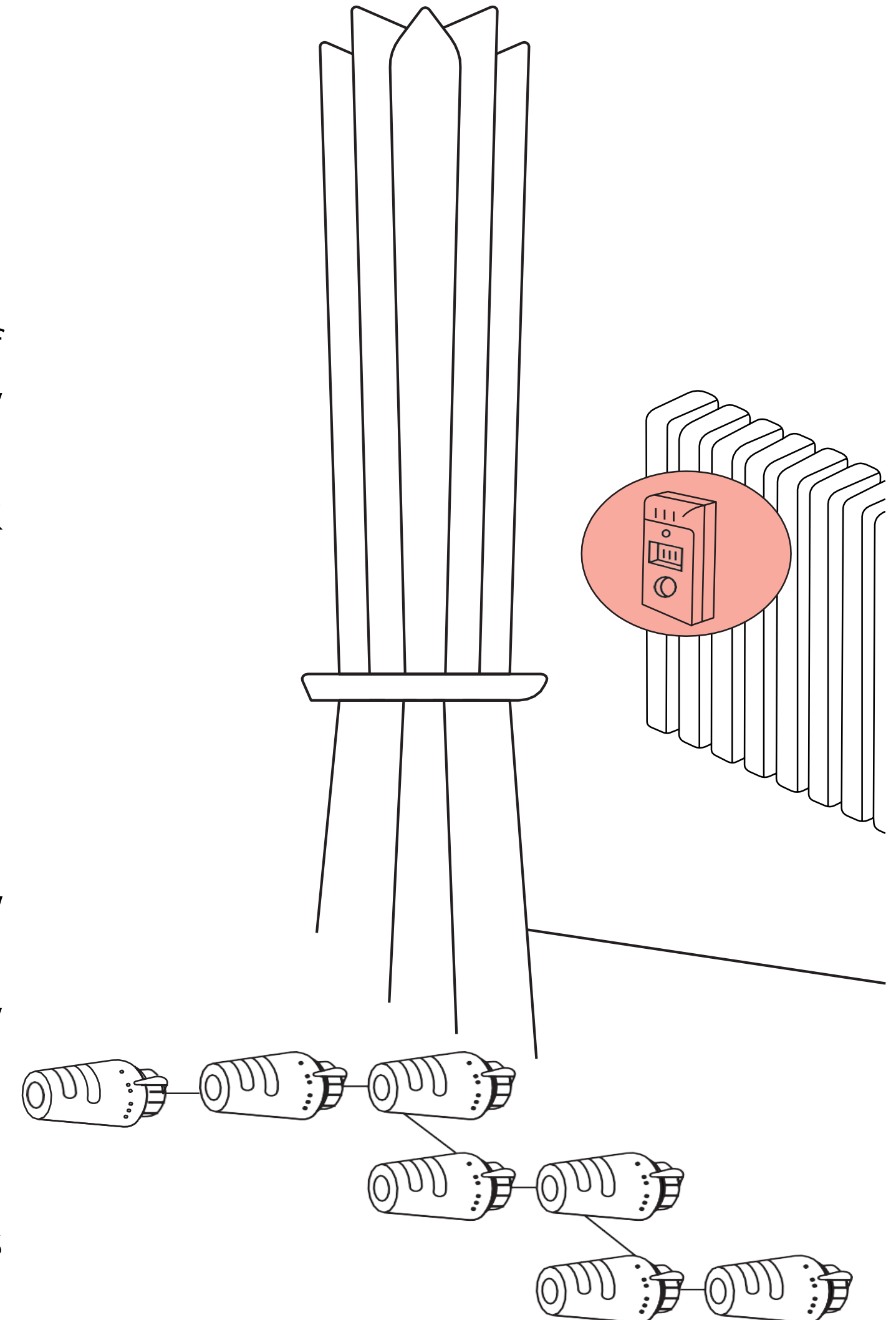
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Within the Reliable Energy Landscape Project, the objective of the DHM Activity is to support the reduction of electricity consumption used for heating by introducing quantity-based thermal energy metering on the DH Termokos supply network in Pristina.

Implementing a consumption-based heat metering is expected to:

- Reduce demand on the district heat network;
- Support expansion of heat supply services to new consumers which rely on electricity for heating;
- Improve the services for the consumers who already reside in buildings connected to district heating services; and
- Enable Termokos to transition into consumption-based billing and thus better align their revenues with their costs and the services they provide.





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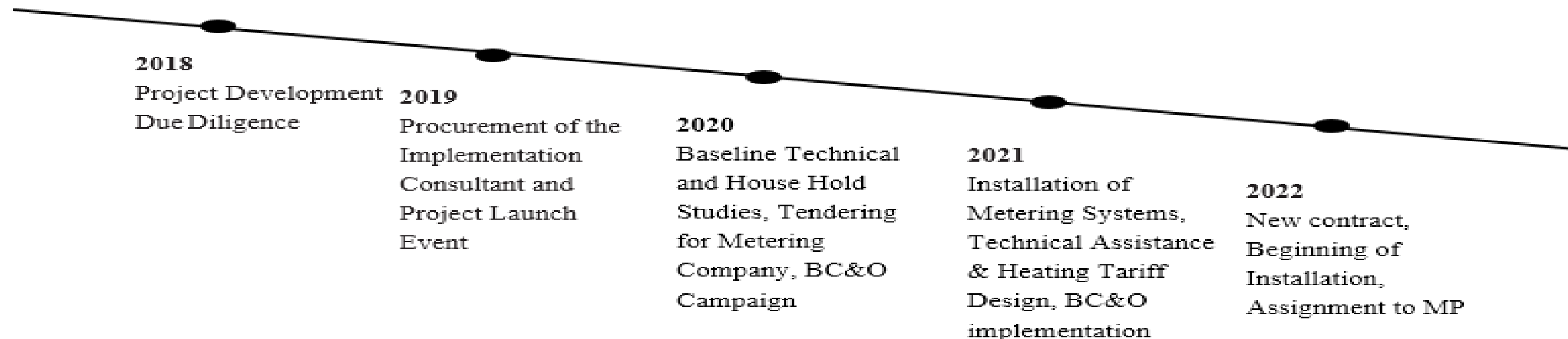
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The aim of these interventions are:

- Installation of measuring equipment in 17,500 apartments to reflect consumption-based heat metering
- Installation of thermostatic heating valves with built-in balancing function on radiators.
  - 70,500 Thermostatic valves
  - 51,300 Heat Cost Allocators
  - 4.500 heat meters
  - Support regulator with the design of consumption-based tariffs.
  - Support the Termokos' corporate upgrade transition from spatial billing to consumption-based billing as well as upgrading the consumers database with new software for pricing and billing.

Total Budget

- MFK:  
**\$10.9 million**
- Municipality:  
**€2 million**

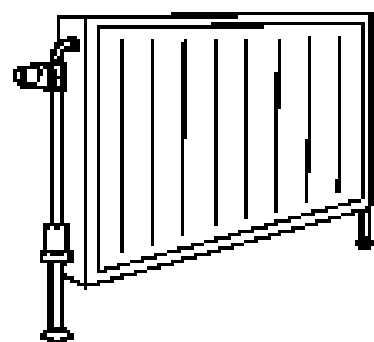




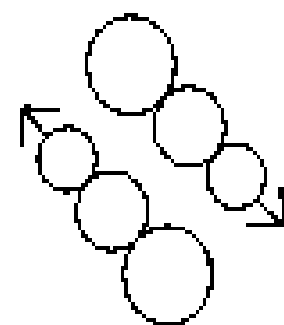
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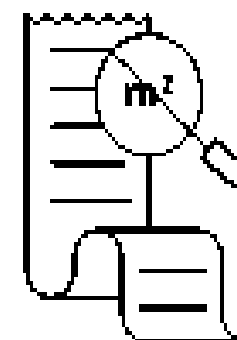
## Outline of activities



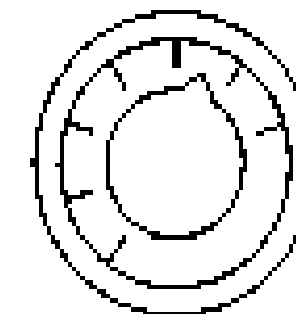
The Meters, Heat Cost Allocators, Thermostatic Dynamic Valves and the Software start installing



MFK, MCC and the Implementing partners start providing training, capacity building, and regulatory support



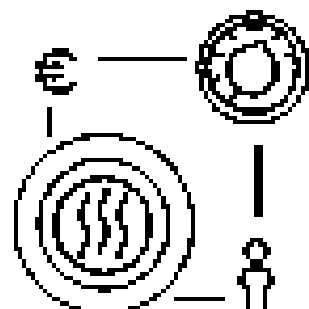
Termokos starts applying the new tariffs



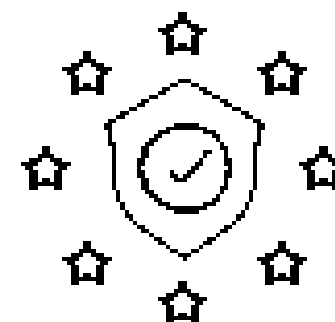
Termokos upgrades billing methodology and customer services



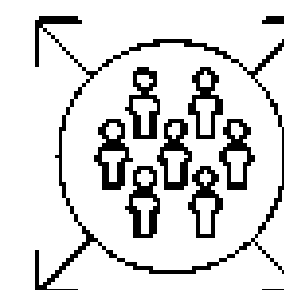
MFK, MCC and the Implementing Partners start intensive behavior change campaigns, helping people understand the potential benefits of the new billing system



MFK and MCC conduct monitoring and evaluation of the systems in place



Environmental and Social Impact Compliance



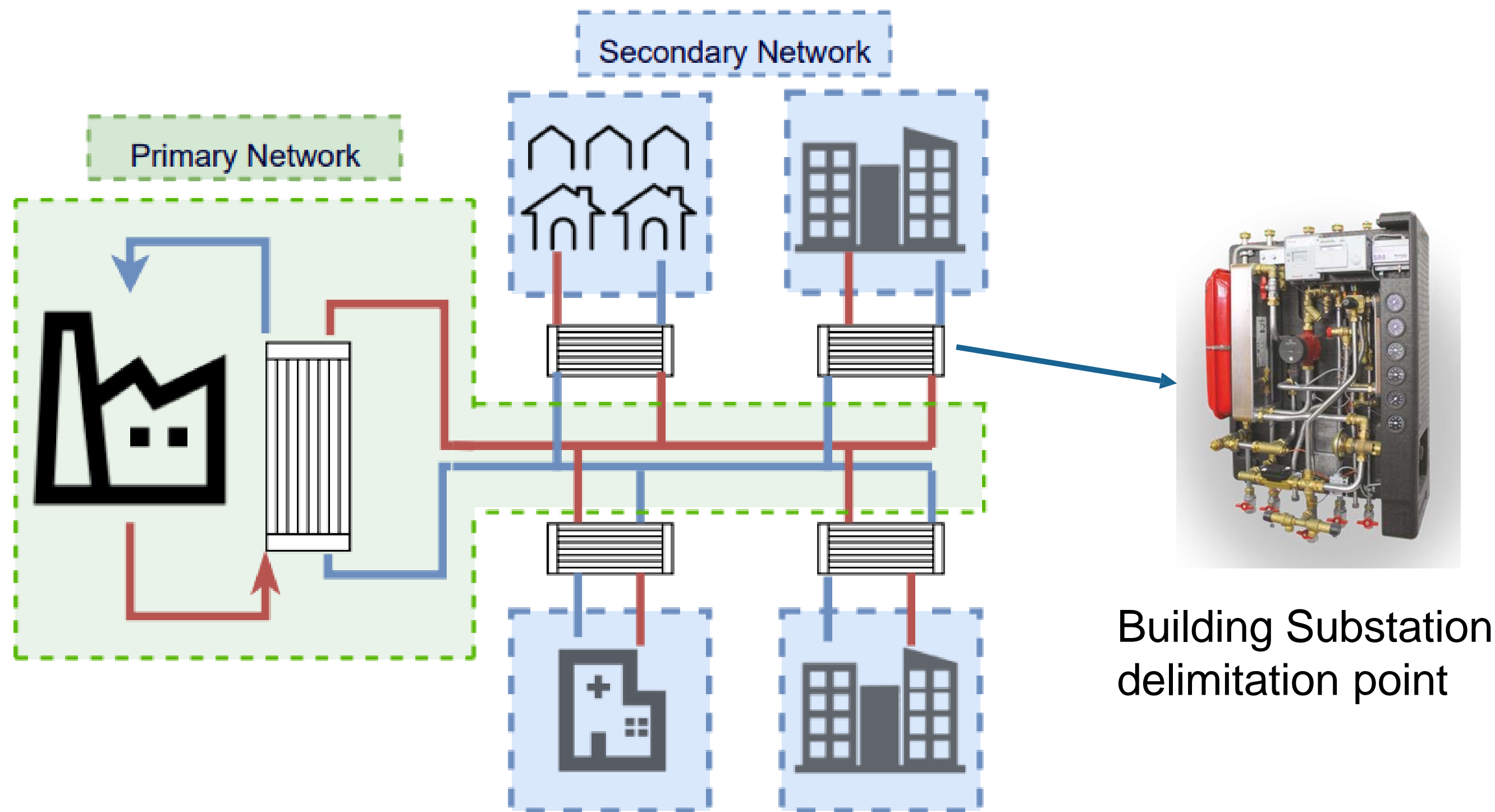
Gender and Social Inclusion Compliance



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## District heating systems in Kosovo



Building Substation  
delimitation point

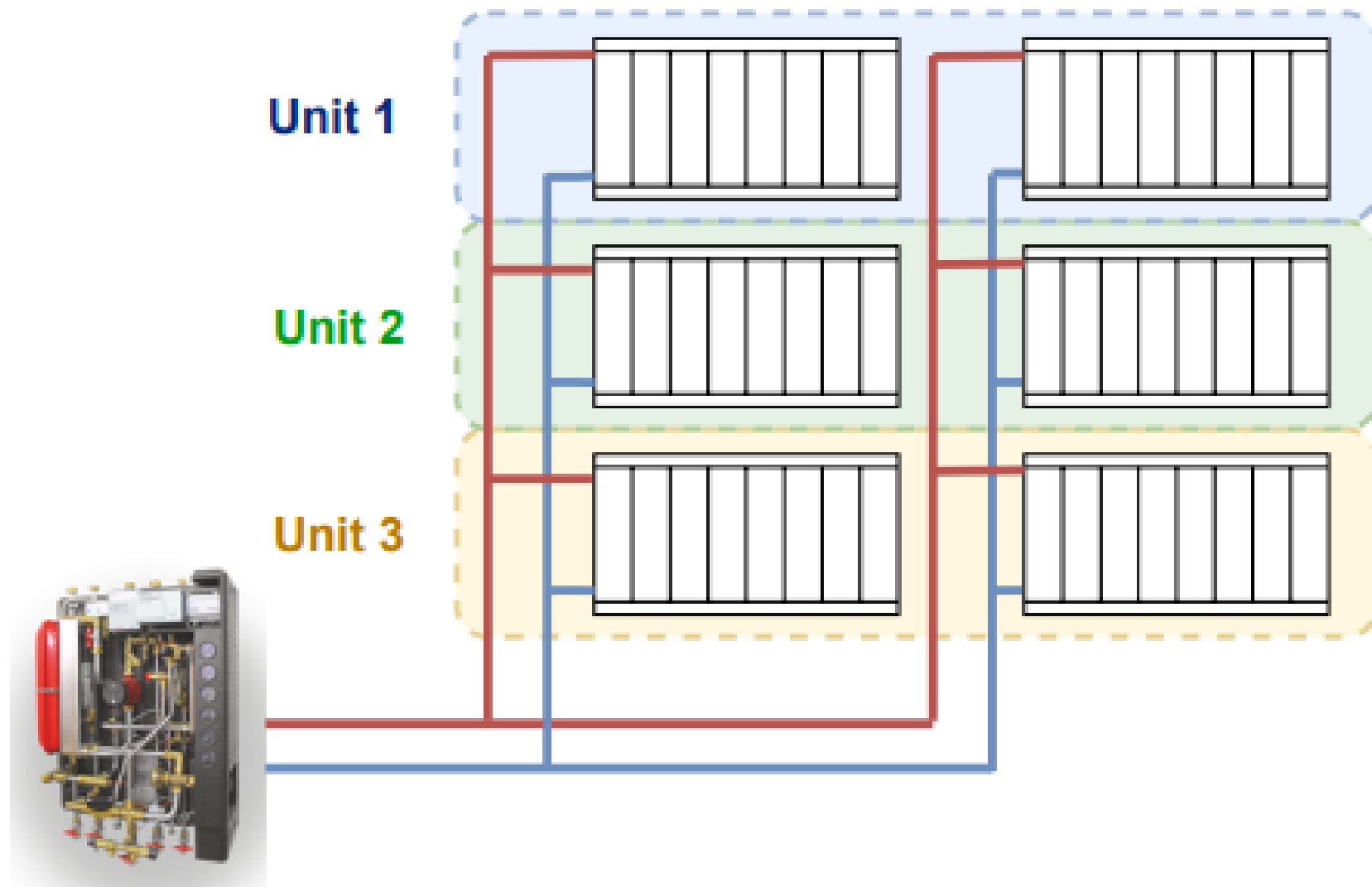


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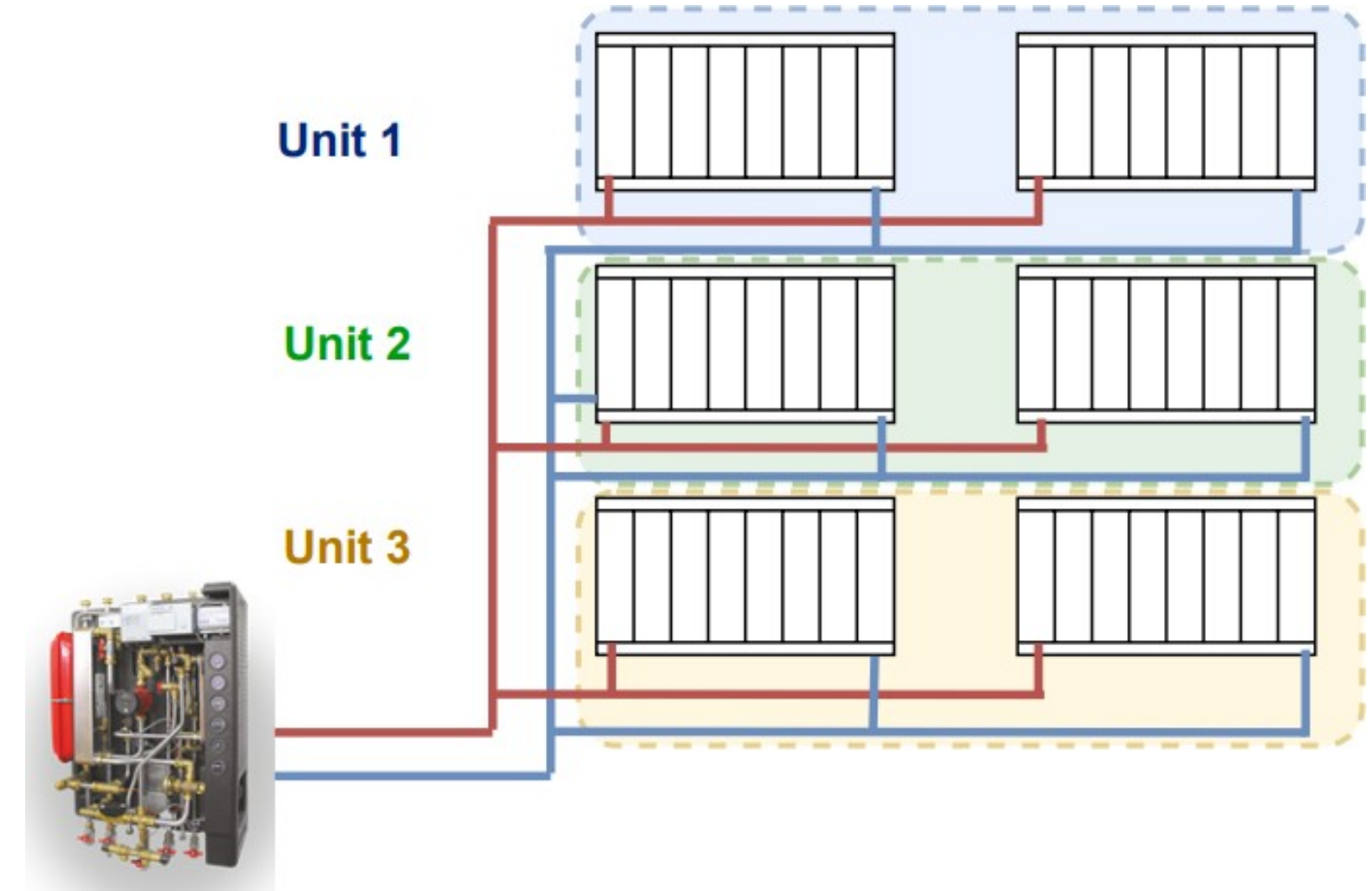
District heating systems in Kosovo

## Vertical piping system



Mainly old buildings (60%)

## Horizontal piping system



Mainly new buildings (40%)

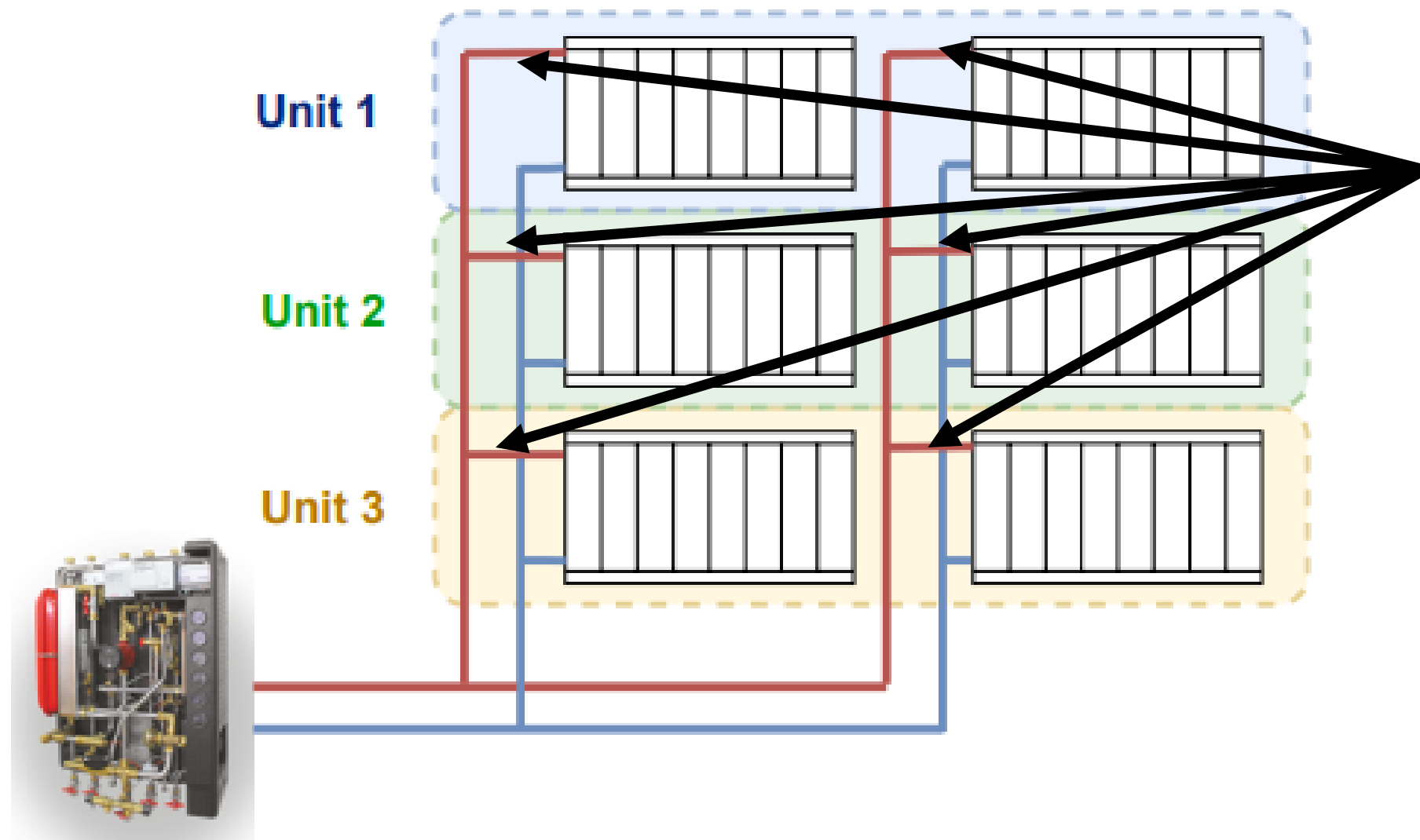


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## Heat consumption at Vertical Piping System

Thermostatic Radiator Valves



Thermostatic radiator valves are self-regulating valves, designed to maintain a constant temperature in a room.



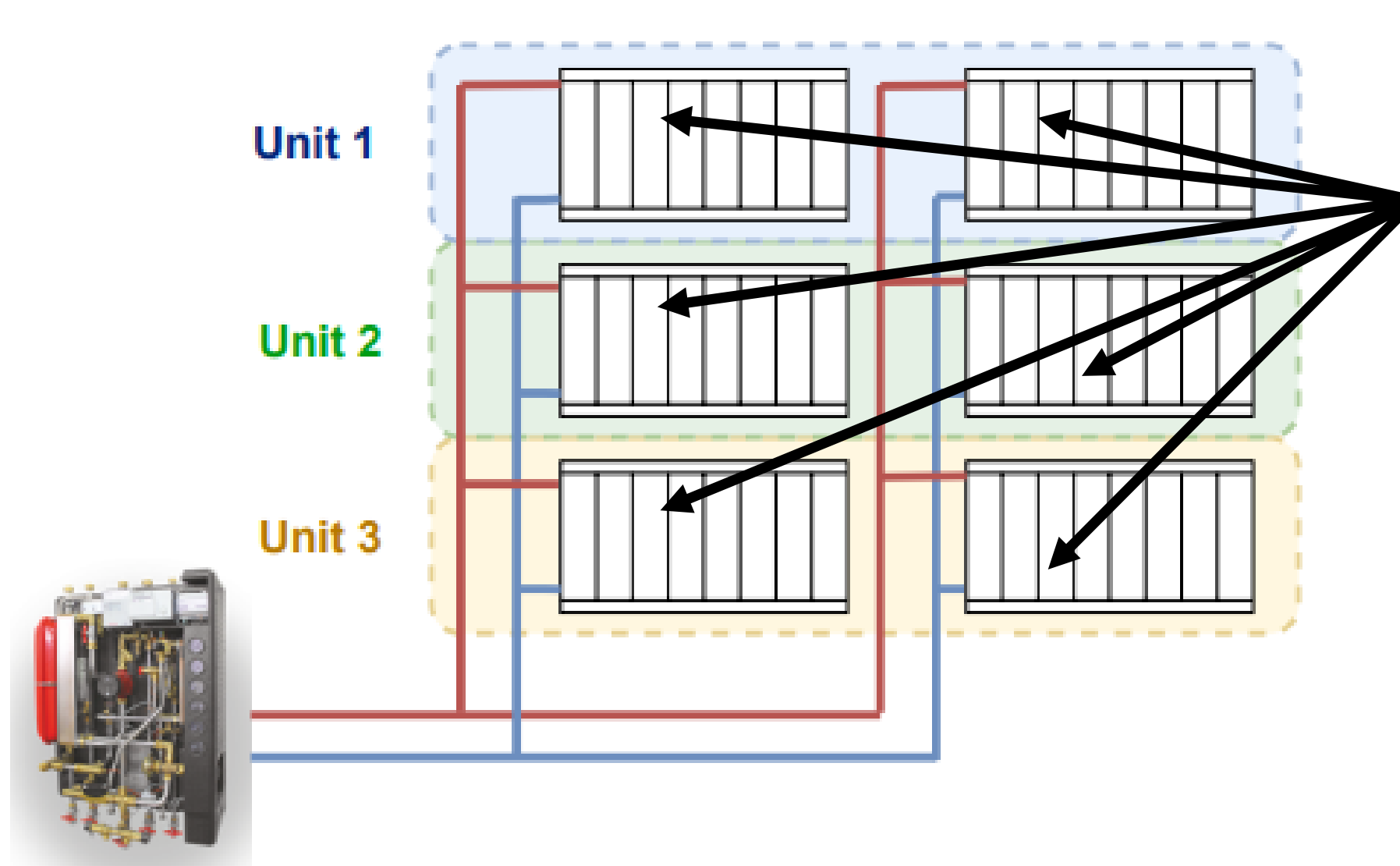


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## Heat consumption at Vertical Piping System

### Heat Cost Allocators (HCA)



HCA's indirectly estimate the heat consumption of each radiator by measuring the temperature difference between a specified point on the radiator surface and surrounding indoor environment (room) and by taking into account the radiator characteristic coefficients.



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## Project Overview

Decon International is currently implementing consultant whereas IVT consult is Supervising the project

- Baselines studies (HH and Technical)
- Tender Documents
- Institutional, Regulatory and Organizational Measures
- Behavior Change and Outreach Campaigns
- Heat-cost allocation methodology to support consumption-based billing
- Training on Consumption-Based Billing provided to both ERO and Termokos
  - Reviewed by ERO and expected to be in public consultation
- Other GSI and ESP trainings and compliance requirements
- Monitoring and Evaluation

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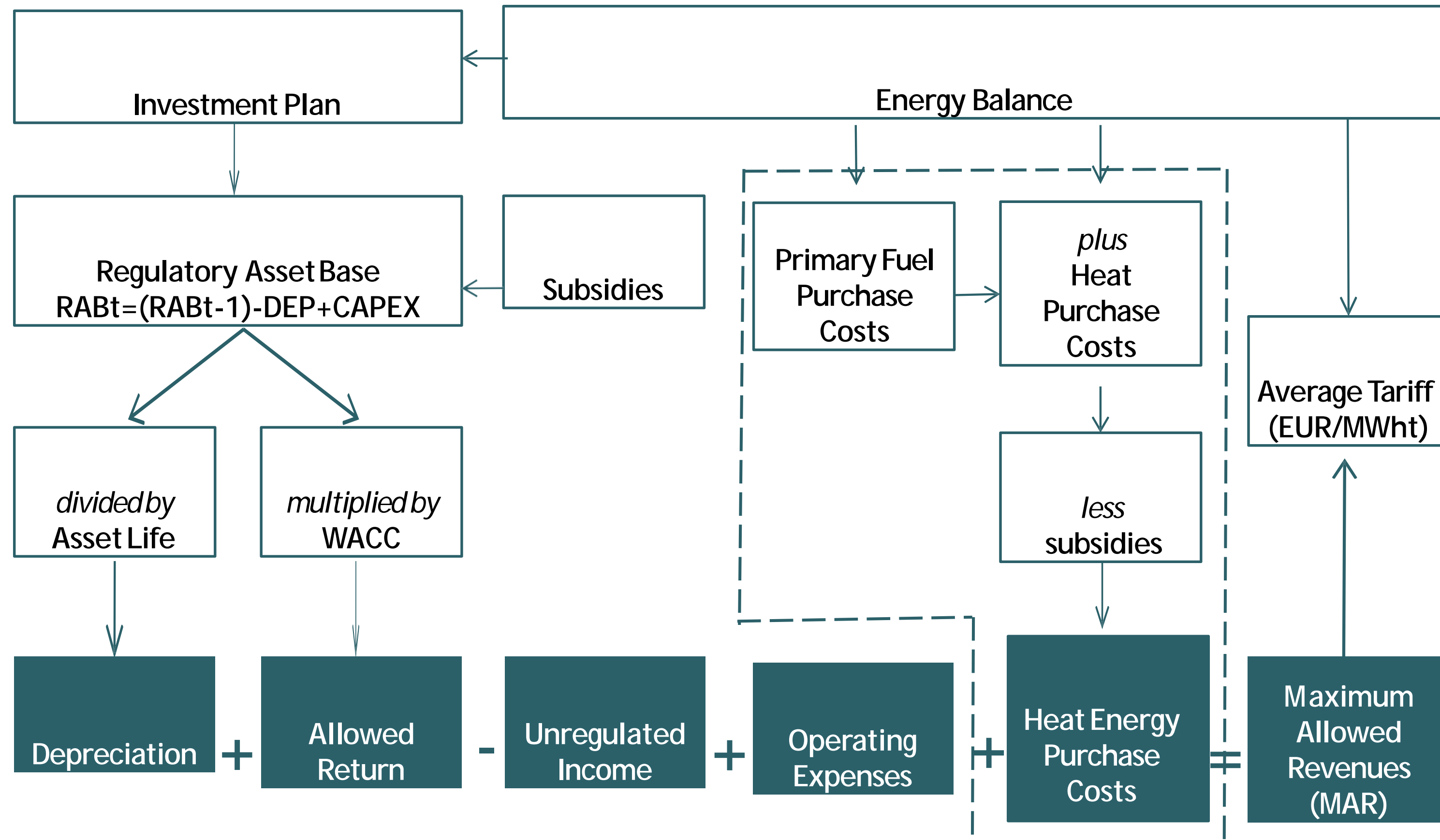
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# PRISHTINA HEATSAVE

## Pricing Methodology-Cap Regulation





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# PRISHTINA HEATSAVE

## Pricing Methodology-Cap Regulation

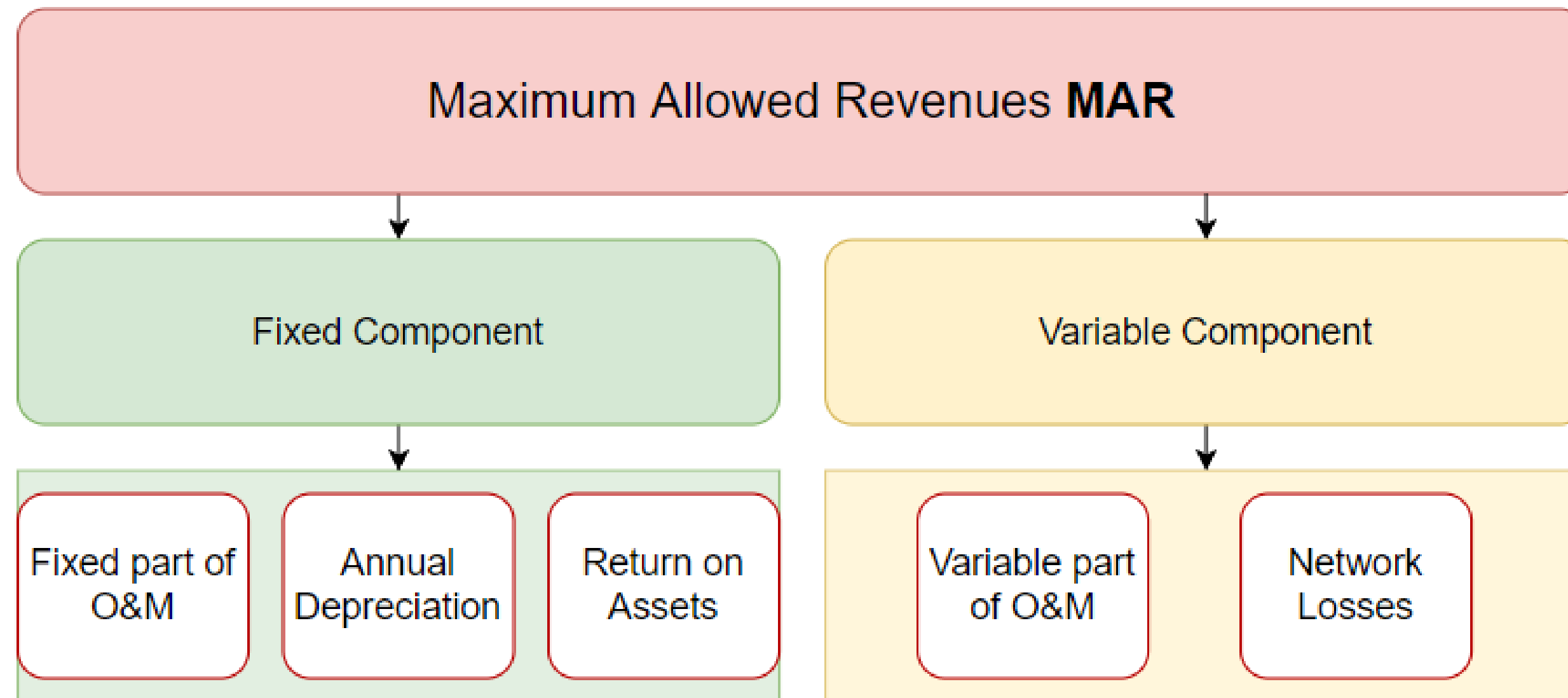
- a) Fair and transparent – reflect actual measured/estimated heat consumption of the unit.
- b) Heat metered at thermal substation-level is the main referent measurement of heat supplied to the building for which the heat supply company should be compensated;
- c) The difference between heat measured at building's substation-level and the aggregated heat consumption of all building's units shall be allocated proportionally to the heating area of each unit;



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## Pricing Methodology-Cap Regulation

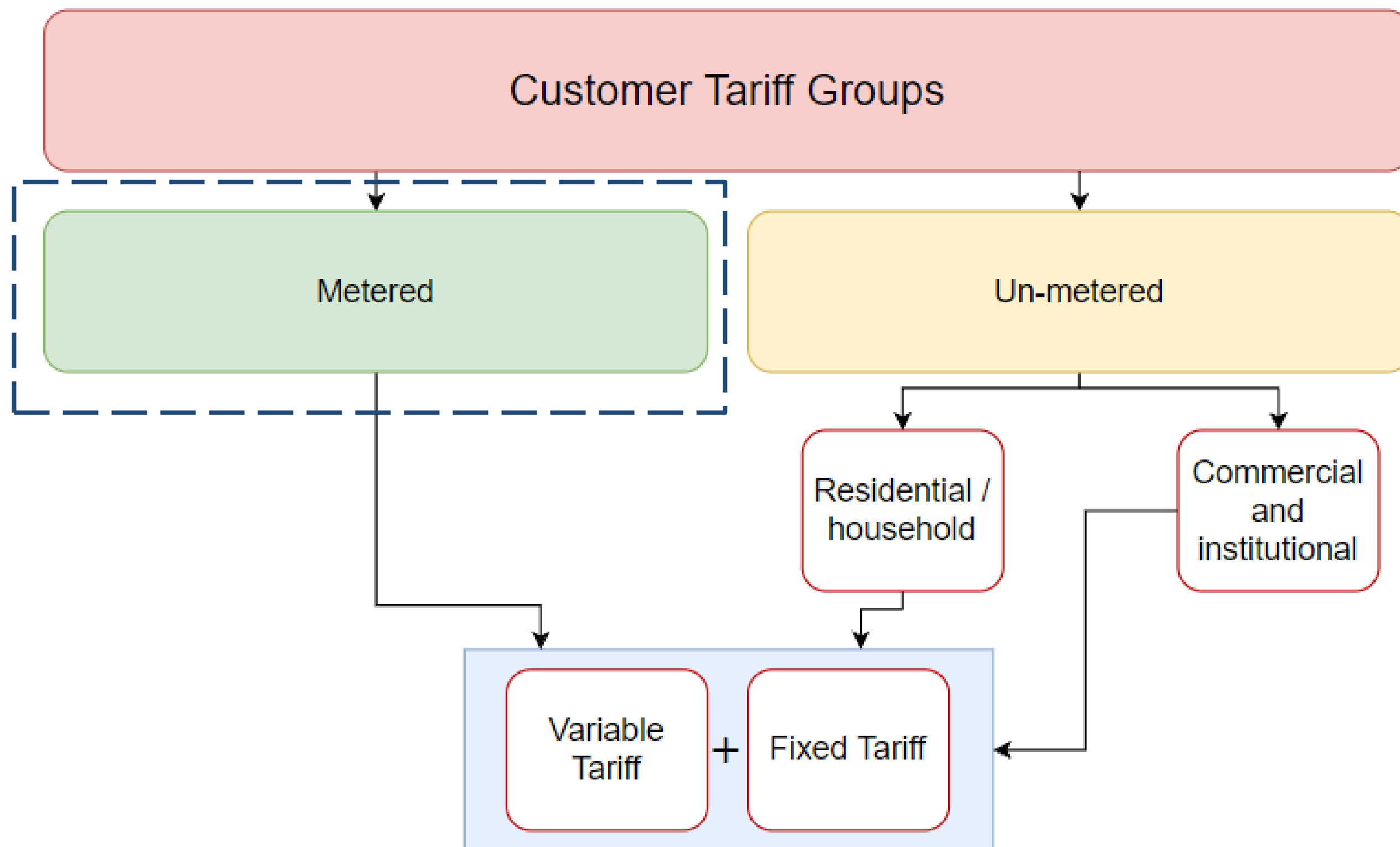




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# PRISHTINA HEATSAVE

## Pricing Methodology-Cap Regulation





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# PRISHTINA HEATSAVE

## Consumption-Based Billing Methodology

Heat metering level		Metering device and measurement point	
Building-Level metering		Heat Meter at building substation	Measures heat supplied to the building
Sub-metering	Vertical Piping System	Heat Meter at substation	Measures heat supplied to the building
	Unit-Level metering through Heat Cost Allocation (HCA)	HCA on the unit's radiators	Allocation of consumed heat between the units
	Horizontal Piping System	Heat Meter at substation	Measures heat supplied to the building
	Unit-level metering through heat meter	Individual Unit's Heat Meter	Measures the heat supplied to the unit



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## Individual Customer Heat Invoice

Thermal Capacity Charge

$$TCC = HCU \cdot HCT, [\text{€}]$$

$HCU$  – Thermal Capacity of a Unit (kW)

$HCT$  – Heat (Thermal) Capacity Tariff (in €/kW/month)

Common Heat Consumption Charge

$$CUS_{CHC} = US_{CHC} \cdot TET, [\text{€}]$$

$US_{CHC}$  – Unit's Share of 'Common Heat Consumption' (kWh)

$TET$  – Thermal Energy (Heat) Consumption Tariff (€/kWh)

Heat Consumption Charge

$$HCC = UHC_{MU-L} \cdot TET, [\text{€}]$$

$UHC_{MU-L}$  – heat consumption of a unit (kWh) that is measured at unit-level;

$TET$  – Thermal Energy (Heat) Consumption Tariff (€/kWh)





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## **Ongoing activities**

- Negotiations meeting with the new awarded contractor for the supply and installation of the measuring and equipment
- Updated / Compressed Implementation Schedule from the implementing contractor.
- Tripartite agreement between Municipality, Termokos, and MFK for assigning the Project after MCC's Threshold Program End Date in September 2022
- Closure plan and assignment to District Termokos/Municipality for the unfinished works by November 2022.



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## BOQ Heat Distribution equipment

List of Goods and Services - Delivery Schedule (Annex 3)						
Description of Goods + Description of Related Services (see chapter 4.7.3 in Section V. Schedule of Requirements)	Quantity	Final Destination as specified in BDS ITB 15.6	Purchaser's Required Delivery Date (as per Incoterms)		Bidder's offered Delivery date	Final Completion Date(s) of Services
			Earliest Delivery Date	Latest Delivery Date		
<b>Heat distribution equipment (DH substation room, riser pipes)</b>			<b>Estimated Contract signature date: 15.03.2022</b>			
Heat circulation pump - DN40,50,65,60	135 pcs	Prishtina, Kosovo	15.05.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Balancing valve - DN25,32,40,50,65,80,100	70 pcs	Prishtina, Kosovo	15.05.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Differential pressure control valve - DN25,32,40,50,65,80,100	70 pcs	Prishtina, Kosovo	15.05.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Differential pressure control valve - DN32,40,50,65,80,100	60 pcs	Prishtina, Kosovo	15.05.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Differential pressure independent control valve - DN25*,32*,40*,50*,65*,80*,100*	35 pcs	Prishtina, Kosovo	15.05.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing



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BOQ (Heat control and metering  
equipment)

<b>Heat control equipment (apartment distribution pipe)</b>						
Thermostatic radiator valve (2-way) with Thermostatic header (based on the technical offer of the bidder)	72,500 pcs	Prishtina, Kosovo	15.04.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Thermostatic radiator valve (3-way)*	50 pcs	Prishtina, Kosovo	15.04.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
<b>Heat metering/ meter reading collection equipment</b>						
Heat meter (additional cost ultrasonic version)	4,300 pcs	Prishtina, Kosovo	15.06.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Heat cost allocators	51,000 pcs	Prishtina, Kosovo	15.04.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Parametrization equipment	5 pcs	Prishtina, Kosovo	15.06.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Data collection/ transmission gateway	800 pcs	Prishtina, Kosovo	15.04.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Handheld unit (walk-by read-out unit)	5 pcs	Prishtina, Kosovo	15.04.2022.	15.05.2022.	Within 2 Months after estimated contract signature date	10 Months after contract signing



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## BOQ Heat metering and billing system

Heat metering and billing system						
Central metering and billing server station	1 pc	Prishtina, Kosovo	15.04.2022.	15.05.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Printing and enveloping machine	1 pc	Prishtina, Kosovo	15.06.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Client PC workstation	4 pc	Prishtina, Kosovo	15.04.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing
Metering and billing software	1 pc	Prishtina, Kosovo	15.04.2022.	30.09.2022.	Within 6 Months after estimated contract signature date	10 Months after contract signing

# THANK YOU



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