




# Financing Strategies for Water Supply and Sanitation Infrastructure: concept, methodology and tool (FEASIBLE model)

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# Structure of the presentation

- 
- **Why Financing Strategies ?**
  - **FEASIBLE: methodology and computerised tool**
  - **Cost assessment: generic cost functions**
  - **How to bridge financing gap ?**
  - **Full cost recovery principle and affordability constraints**

# Why Financing Strategies ?



Many EECCA countries and provinces set goals / targets for WSS sector but **failed** to achieve them

## Because

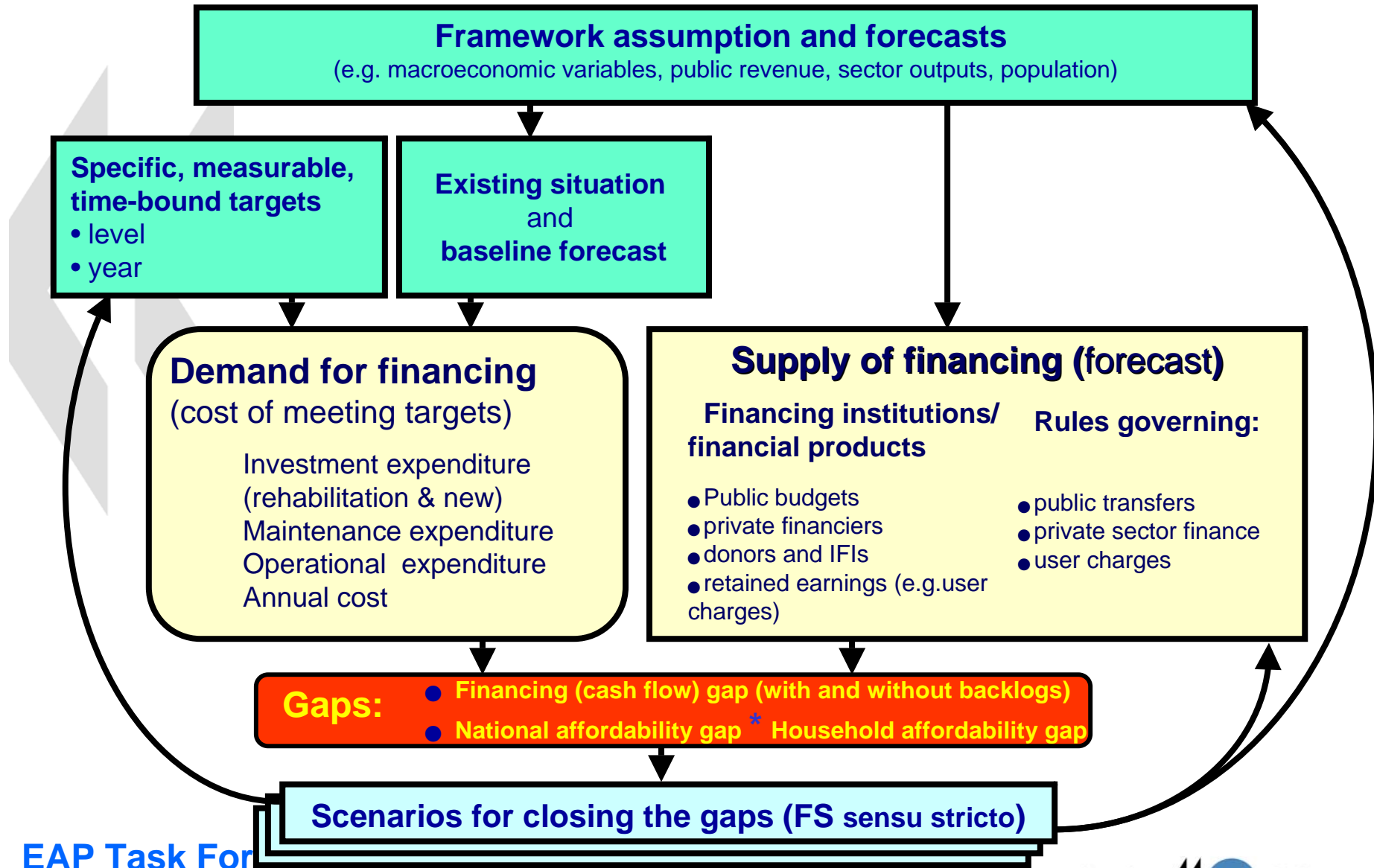
- the targets were not SMART and/or
- the countries/regions failed to address associated financial issues and social implications of user charges increase

**Financing Strategies (FS) were developed to address these issues**

## Key elements of the FS Methodology

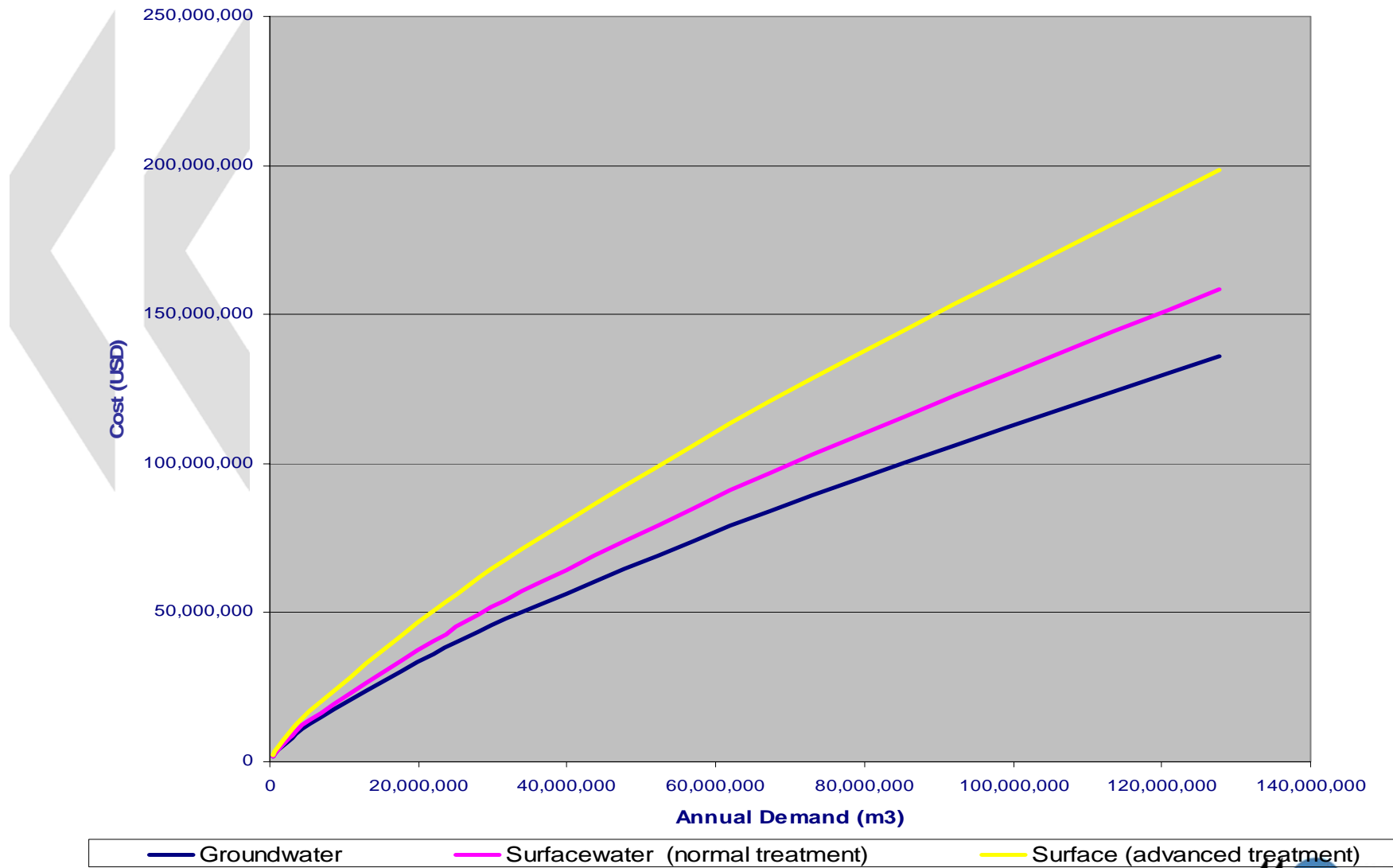
- Water demand assessment and forecast
- Assessment of water resources, existing WSS infrastructure and service level, ranking main problems of the sector
- Targets setting and costing, expenditure needs assessment using **FEASIBLE** model (*generic cost functions and price correction*)
- Supply of finance forecast based on macro-economic and other assumptions
- Financing gap and Affordability assessment
- Package of policy measures to bridge the gap (if any) **under affordability constraints**

# Structure of the FEASIBLE model



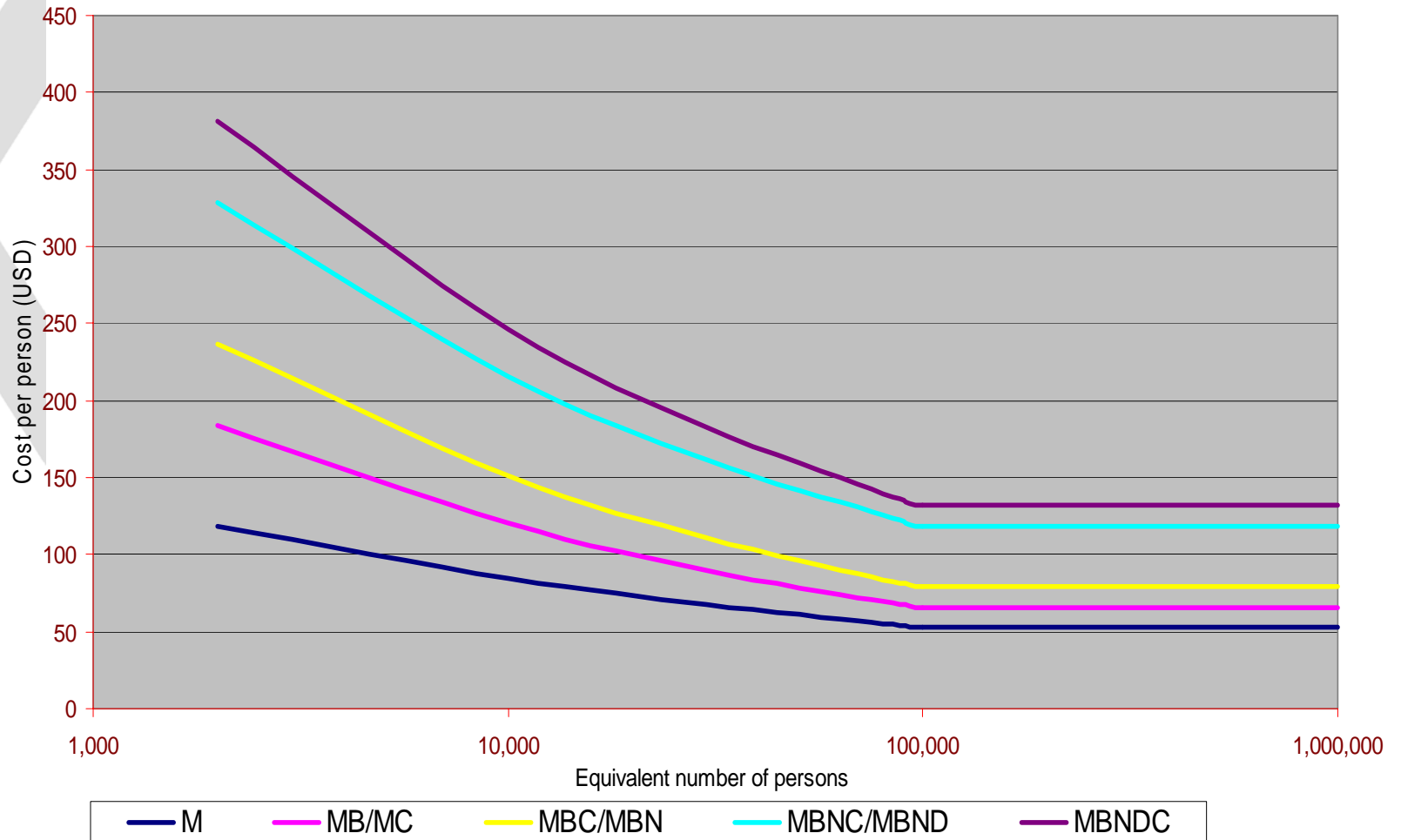
# Targets costing – example of generic cost functions

## Water intake - treatment - transmission



# Targets costing – example of generic cost functions

## Wastewater treatment



# Cost assessment using generic functions



- **Sufficiently general to be feasible to produce** - with much less efforts than the feasibility study for each water utility / investment project
- **Sufficiently accurate to be useful for cost estimate at national and regional level**

**In Lithuania 78 WWTPs analysed:**  
**generic cost function was 2% wrong on average,**  
**but more than 50% wrong in individual cases**

# Existing Situation: Available Infra and Service level

## Water Supply

- Ground/Surface water and treatment technology
- Coverage of piped water supply
- Water Consumption
- Water Quality and Regularity of supply

## Wastewater

- Coverage of collection system
- Type of collection system
- Connection rate for wastewater treatment
- Wastewater treatment technology

# Financing gap assessment and Affordability check



**First, input data on existing situation and price correction factors, and assess:**

- **Expenditure needs (O&M, Capex, Debt service), Supply of finance (by source and Instrument) and Financing (cash flow) gap – annual and accumulated over the period**
- **Affordability for Households (HHs)**
- **Affordability for public budget and economy**

**Then develop a package of policy measures to bridge financing gap under affordability constraints**

# BALANCING O&M EXPENDITURE NEEDS WITH AFFORDABLE FINANCING

- 
- ***Provide incentives for more effective use of available resources :***

**Demand side incentives** for rational water use

**Supply side incentives** for operational efficiency

**Incentives for infrastructure and capital expenditure optimisation, effective use of public funds**

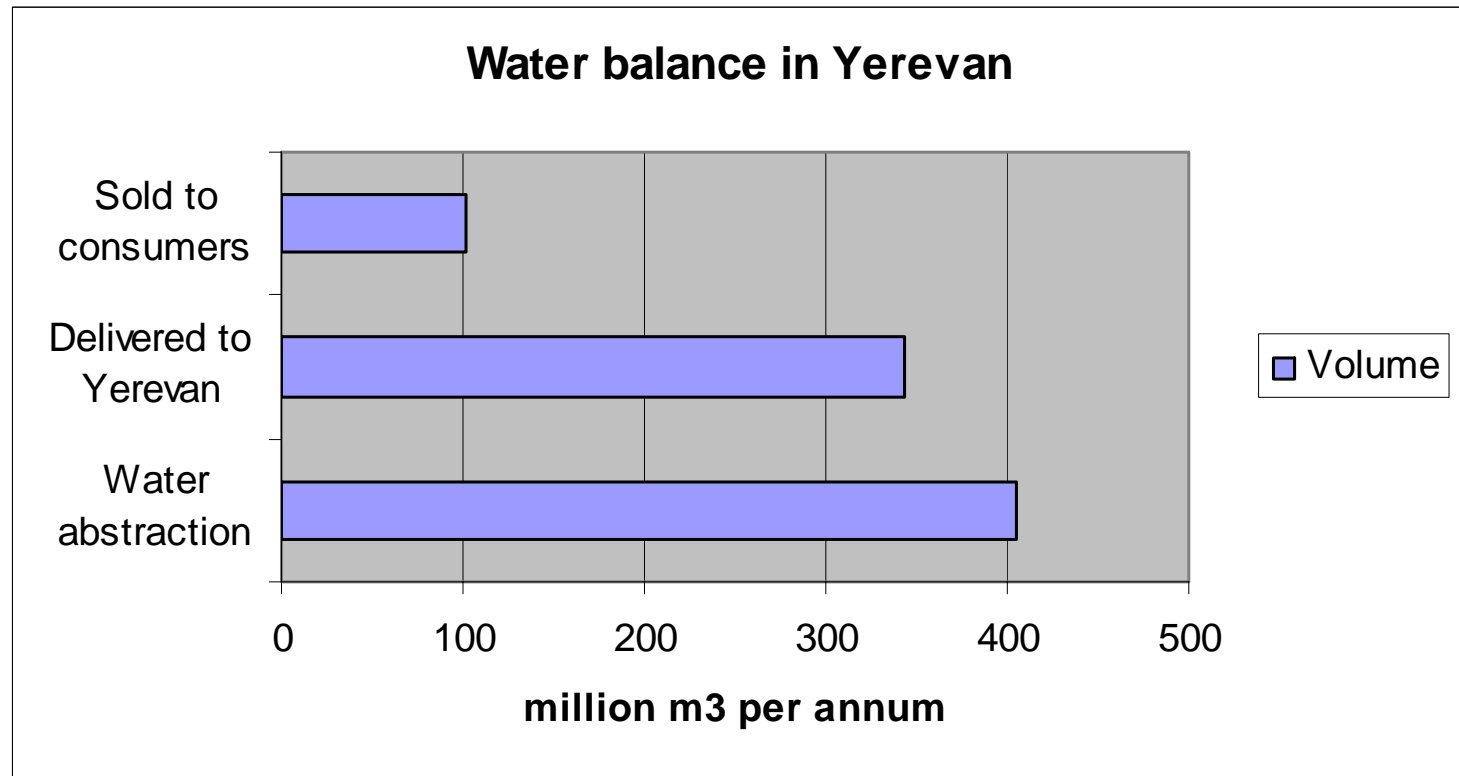
- ***Set reduced, more realistic targets and/or***

- ***Increase supply of finance:***

**Improve collection and/or increase user charges and/or public expenditure and/or borrowings – up to the affordability limit**

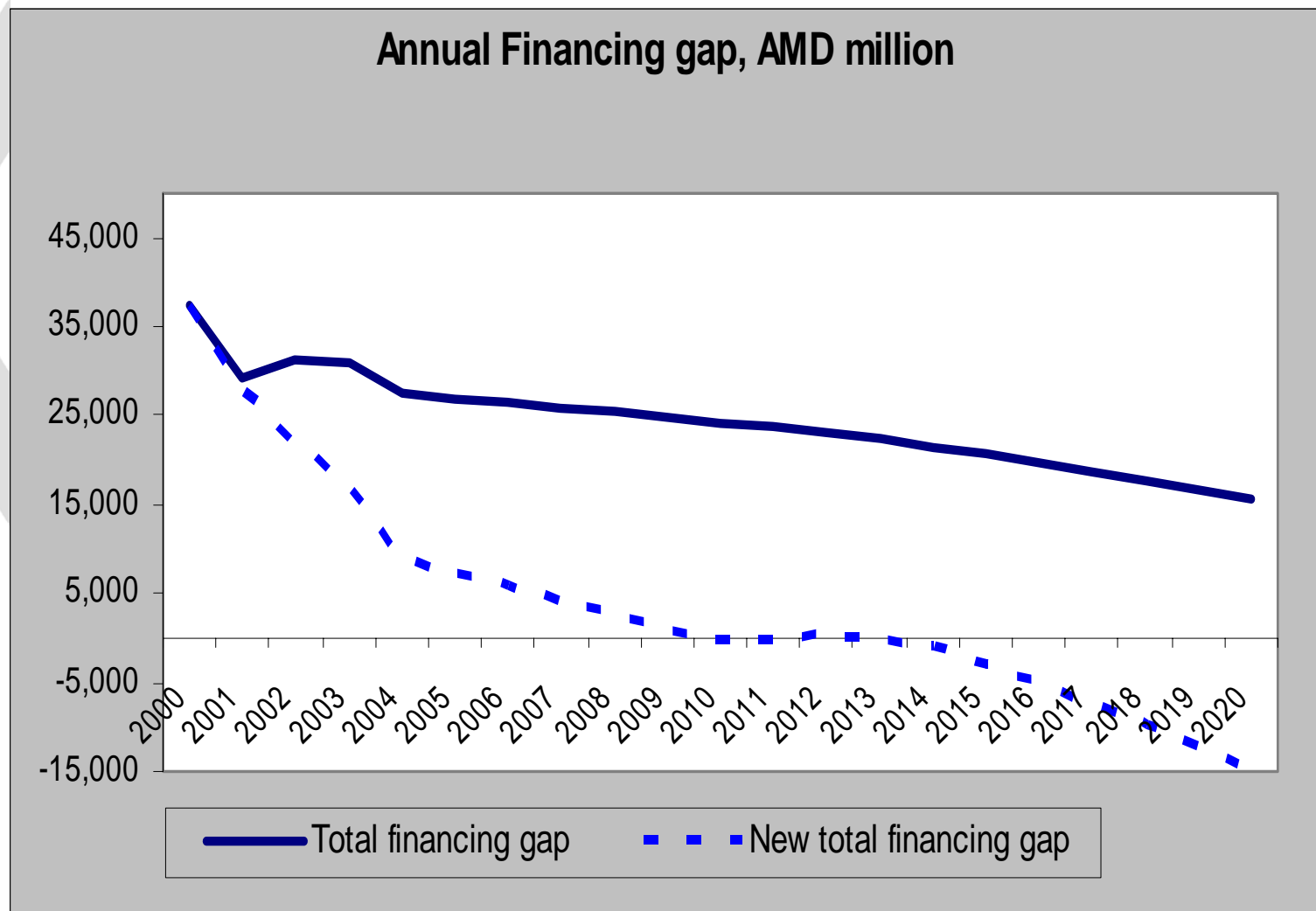
**Mobilise other sources of financing**

## Low efficiency – case of Yerevan



- Huge water and energy saving potential can be utilised **in the short term** thus reducing expenditure needs
- Adjustment of oversized infra to actual water demand will bring savings **in medium to longer term**

# Package of policy measures to gradually bridge financing gap - case of Armenia



## Financing Strategies applying FEASIBLE approach – case-studies in FSU

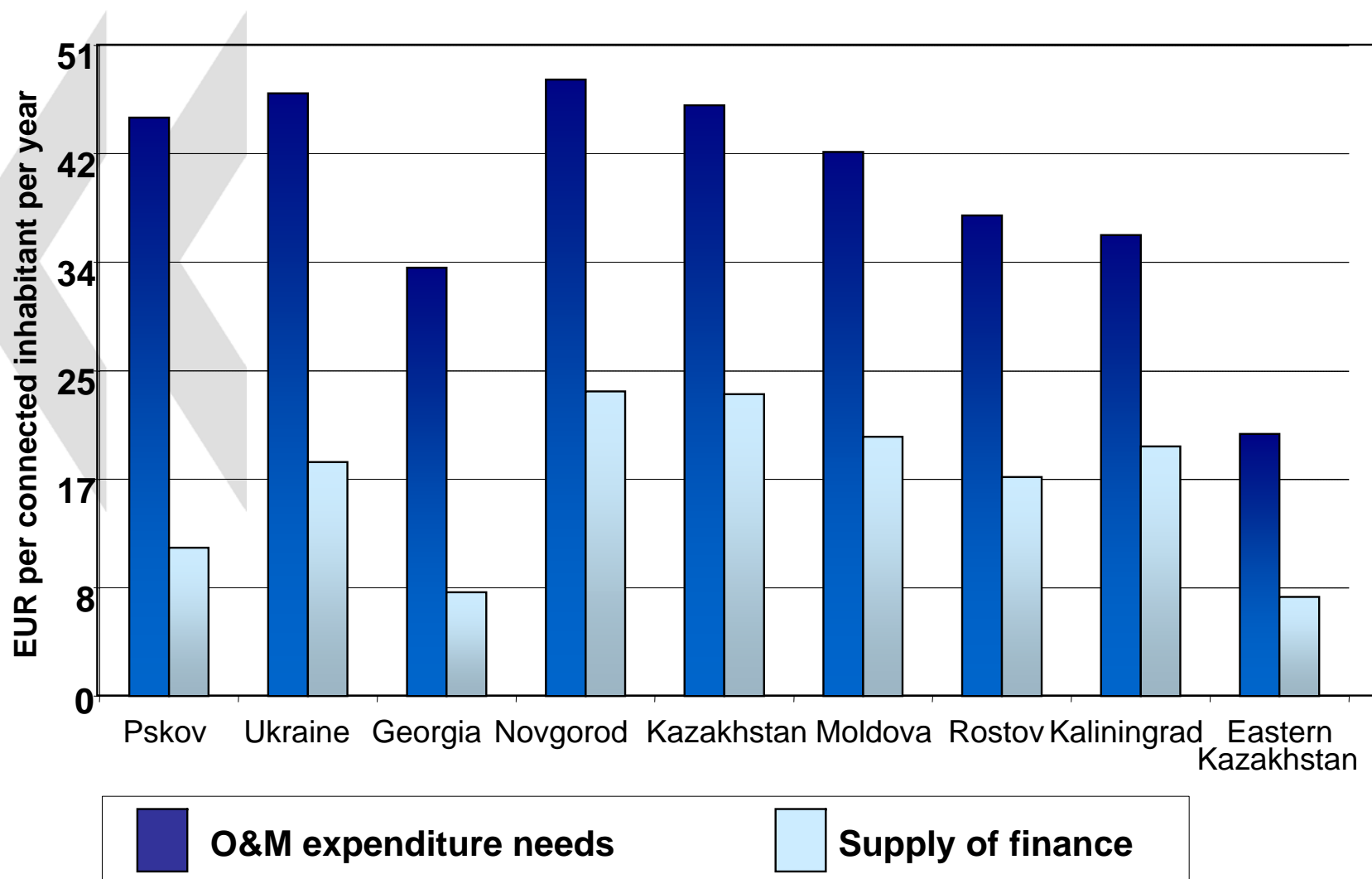
Country	Region	Urban water supply	Urban wastewater collection and treatment	Municipal Solid Waste
Georgia	National			
Moldova	National			
Russian Federation	Kaliningrad			
	Novgorod			
	Pskov			
	Rostov on Don			
	Yaroslavl			
	Khanty-Mansijsk (KhMAO)			
	Leningrad Oblast + St.Petersburg			
	Caucasus Mineral Water region			
Kazakhstan	National			
	Eastern Kazakhstan Oblast			
Ukraine	National			
Armenia	National			
Latvia	Riga			

# MAIN OBSERVATIONS FROM CASE-STUDIES IN EECCA

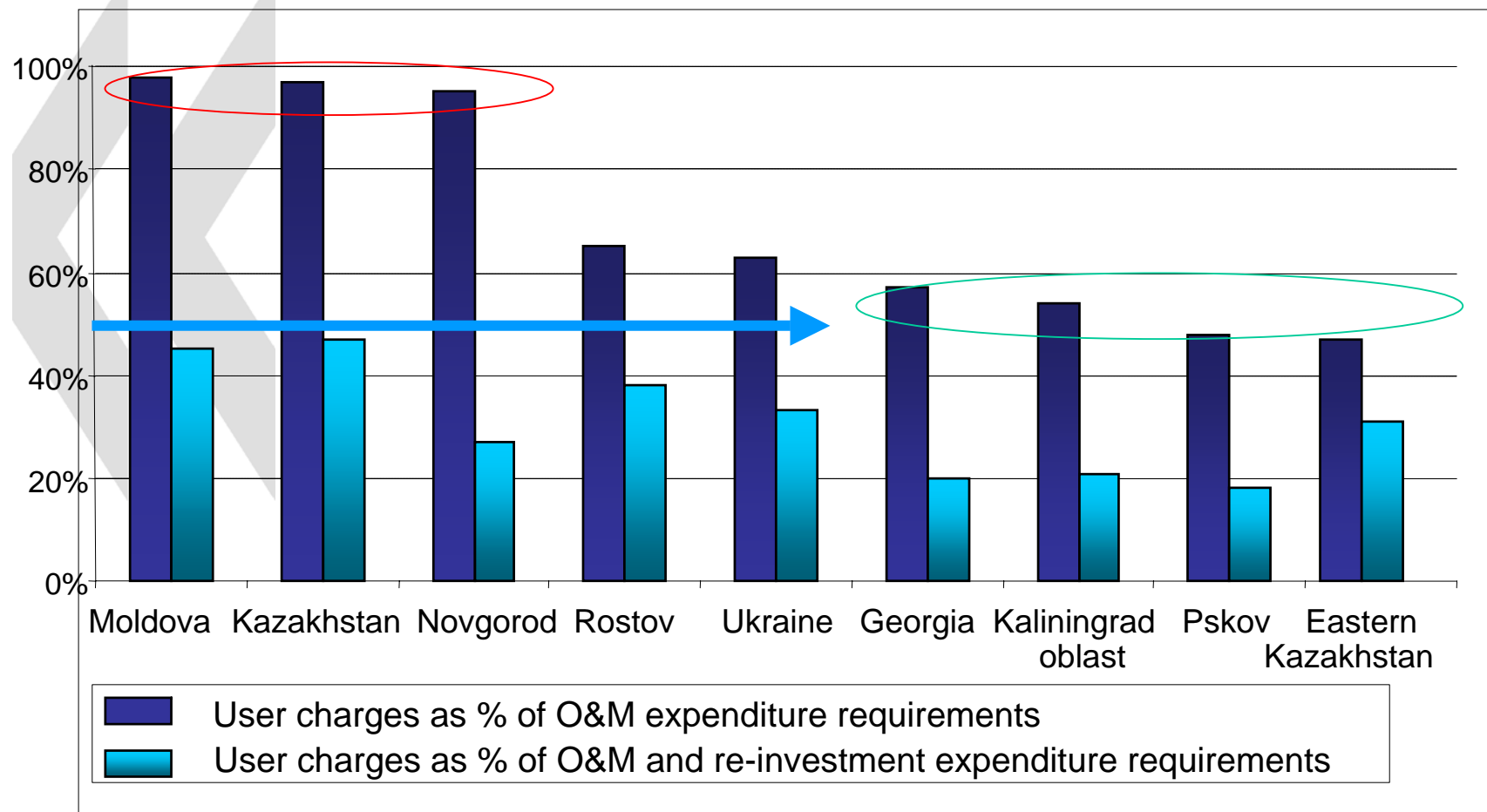
## Finance and Investment:

- In spite of recent progress, tariffs are still low in EECCA and there is **not enough** finance to cover even baseline (O&M) expenditure needs of water utilities – with few exceptions (donor cities)
- Huge lack of financing for infrastructure maintenance and rehabilitation, as well as for extension
- Public funds and international borrowings are major sources of capital investments in publicly owned infra
- Very little proportion of public capital expenditure targeted to rural area

## BASELINE SCENARIO: O&M EXPENDITURE NEEDS COMPARED WITH TOTAL FINANCING AVAILABLE (in 1999-2001)



# PRESENT USER CHARGES AS % OF EXPENDITURE NEEDED TO IMPLEMENT BASELINE SCENARIO



## MAIN OBSERVATIONS FROM CASE-STUDIES IN EECCA

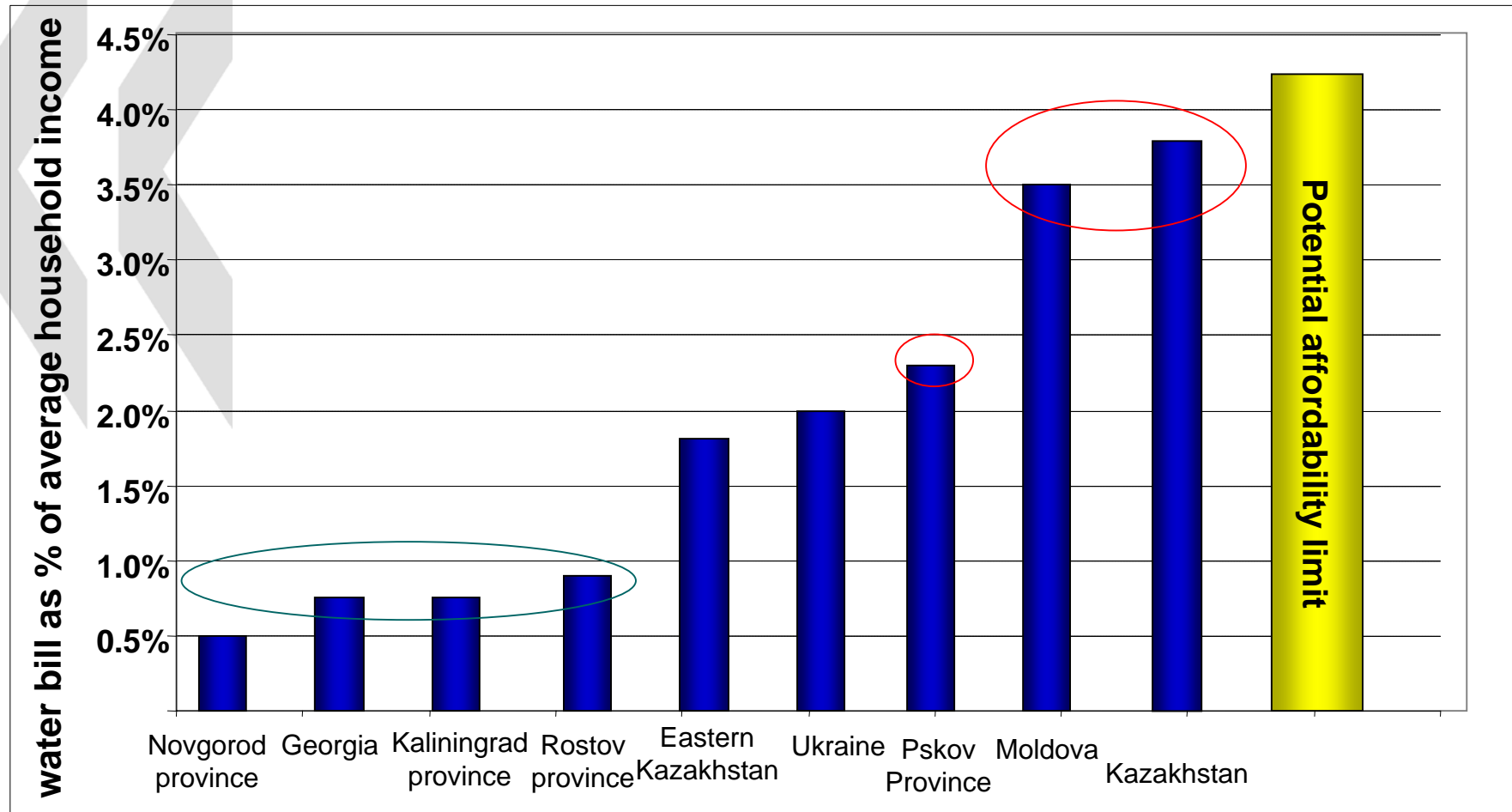
### ...are present WSS User charges affordable ?

- In most of cases **present** user charges are affordable for majority of households (HHs) – applying 3-4% threshold →
- Even in poor countries there is some room for user charges increase to **affordability limit**
- However, there is little sense to further increase user charges until collection is substantially improved (Pskov, Armenia)


### ... are HHs able and willing to pay more ?

# FUNDINGS from ATP and WTP ASSESSMENT in EECCA

- Some proportion of HHs is able to pay for water more (and even willing to pay more for improved services)



# LESSONS LEARNED FROM CASE-STUDIES IN EECCA: AFFORDABILITY

- 
- Affordability limit (as well as WTP) is **site specific**, substantial fall of the collection rate after tariff increase may indicate that the limit is achieved
  - Whenever water bill is affordable for average HH it is often NOT affordable for many poor households
  - In the most poor countries and provinces user charges which would allow to cover full O&M cost of water utilities **would not be affordable** for substantial proportion (40-60%) of population

## O&M expenditure coverage in WSS sector by User charges and average per capita income

Country / region, year of case-study	Affordability limit – water bill as % of average per capita income	Min. annual per capita income that would ensure full coverage of O&M cost by user charges set at the affordability limit, EUR	Average annual per capita income one year before, USD	Water bill sufficient for full coverage of O&M cost as % of the actual income
<b>Novgorod, 2000</b>	2%	1680	<b>810</b>	<b>4.1%</b>
	3%	1150		
<b>Pskov, 2000</b>	2%	2000	<b>640</b>	<b>6.3%</b>
	3%	1350		
<b>Rostov, 2002</b>	2%	1150	<b>790</b>	<b>3.0%</b>
	3%	800		
<b>Armenia, 2003</b>	3%	1450	<b>385</b>	<b>11.3%</b>
	4%	1100		

## LESSONS LEARNED FROM CASE-STUDIES IN EECCA: FINANCIAL AUTONOMY or PUBLIC FINANCING ?

- 
- Financial autonomy of water utilities should be a long-term objective in EECCA

but


- HH affordability constraint IS a critical issue in most poor countries and provinces
- *Annual per capita income at some 1200-1600 EUR is a precondition for financial autonomy of water utilities. Achieving this level of income will take some years*
- Public funds will therefore have to play essential role

# Financing Strategy as a Strategic Planning Tool


## Financing Strategy helps to:

- (1) SET UP REALISTIC TARGETS AND DESIGN FEASIBLE INFRASTRUCTURE DEVELOPMENT SCENARIO**
- (2) BALANCE O&M EXPENDITURE NEEDS WITH AFFORDABLE USER CHARGES**
- (3) SHOW HOW RELATED TOTAL EXPENDITURE COULD BE FINANCED AND REVEAL ROLE AND EXPECTED REALISTIC FINANCING FROM MAIN SOURCES**

# Relevance for decision making

- 
- **Reveal consequences of choices immediately and transparently**
  - **Provide solid quantitative arguments (hard money talks)**
  - **Make trade-offs between different commitments explicit, force discussions about real priorities and cost-effectiveness**
  - **Inform decision-makers how to strategically allocate limited funds and/or leverage additional finance**
  - **Instrument to support claims on the public budgets and public investment programs**

# Relevance for decision making

- 
- **Check whether proposed targets are SMART - realistic and affordable - calculating the 3 gaps**
  - **Develop realistic scenario(s) - how to bridge the gap(s) and achieve the targets**
  - **Aggregate WSS sector programs / Directives and countless individual projects into systematic, transparent framework**
  - **Facilitate shift from the “needs” (and “wish lists”) to “affordability” approach**
  - **Enable quick and apparent “what-if” simulations with different assumptions**

# Financing Strategy and FEASIBLE model – possible use in EU


## FOR ACCESSION COUNTRIES

- Reality check and/or development of sector programs and Directive-specific implementation programs for medium and big countries where central planning and micro-management of individual projects is not feasible
- Instrument to support claims of line Ministers on the public budgets and public investment programs
- Instruments to support negotiations of compliance/transition periods after accession
- Instrument for measuring and reporting progress in implementation


## FOR THE EU COMMISSION

- Reality check of Accession Country commitments
- Additional dimension (bigger picture) for appraisal of financial viability of projects supported by financial instruments

# What the Financing Strategy and FEASIBLE model CAN NOT substitute for

- 
- **WSS Sector programme and Feasibility studies**
  - **Targets and priority setting**
  - **Cost-effectiveness optimization**
  - **Good policy making and effective implementation**
  - **WTP and ATP analysis**

## METHODOLOGY AND MODEL DEVELOPERS AND SPONSORS



**FEASIBLE methodology and model** was developed by COWI AS in co-operation with OECD (NMCD, EAP TF) and funded by DEPA/DANCEE

**Case-studies** were funded by DEPA/DANCEE, TACIS and OECD

**Reports available** at OECD and COWI:  
[www.cowi.dk](http://www.cowi.dk) and [www.cowi.ru](http://www.cowi.ru)



**FEASIBLE model is a public domain**

**To learn more about Financing strategies,  
please visit:**

[www.oecd.org/env/eap](http://www.oecd.org/env/eap)

[www.cowi.dk](http://www.cowi.dk)

**and consult with project managers:**

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**THANK YOU !!**