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## Innovative Financial Solutions for Sustainable Cities

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# An Innovative Financial Solution for Municipal Governments: Integrated PPP (I-PPP)

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- What is a PPP:  
A PPP with shared goals
- What is an “integrated” PPP:  
A PPP with shared goals supported by shared equity ownership between the public and the private sector

## Why Is an I-PPP Sustainable?

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- Shared equity
- Shared costs
- Shared profits
  
- Shared decisions
- Shared results
  
- Shared goals
- Shared responsibility

## Who Are the Private Partners for I-PPP?

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- Public utility companies
- Institutional investors
- Private equity companies
- Private direct investors

# What Makes an I-PPP Attractive for a Municipal Government?

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- Quality
- Quantity
- Tariff Sensitivity
- Cost Efficiency
- Valuable Assets
- Creating a Secondary Market for Public Utilities
- **High level municipal service**

## What Are the Goals for a Private Partner in I-PPP?

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- Reasonable profits
- Long term and yet stable investment
- More competitive position in the market
- Strategic investment

I-PPP:

## The Example of Wastewater Treatment

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- Cost & tariff
- Maintenance
- Operations & management
- Training
- Building a secondary market for wastewater treatment plants

## Tackling the Cost Issue

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- Energy costs
- Maintenance, training costs
- Treatment interruption time
- Construction costs

## Cost Efficiency in Energy

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- The cheapest ingredient for a wastewater treatment technology or process so far is oxygen. Oxygen is taken directly from the air around the WWTP and - so far - does not represent a cost factor of its own.
- The process of taking in the oxygen consumes energy. Optimized up-to-standard technologies only take in as much oxygen as is needed for the process.
- Some wastewater treatment processes need more oxygen and others less. It is important to evaluate the intake capacity and the usage of oxygen in a wastewater treatment process, comparing it with other technologies.
- In many processes the waste of oxygen and hence the high degree of energy consumption for bringing the oxygen into the wastewater is bigger compared with what is available in the market today.

# Cost Efficiency in Maintenance & Training

- i. How stable is the process?
- ii. How much maintenance is required?
- iii. How much training is needed?

## Hence, the question again: How efficient can a WWTP be run?

- The more sensitive and complicated a process is, the more it may require a sophisticated team of trained specialists to supervise, maintain and repair it.
- This may require a highly skilled technical team with an underlying management & operations system.
- This may need a team located close or not too far from the plant to be on site whenever a problem arises.
  - i. Costs of a sophisticated team and its degree of getting organized is high.
  - ii. In case an investor only enjoys few WWTPs within a certain area this will generate a relatively high number of skilled workers.
  - iii. Team might sit idle if no problems occur, generating costs with no extra return.

# Cost Efficiency Regarding Treatment Interruption Time

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- i. How stable is the process?
- ii. How often is maintenance required?
- iii. How often is the treatment interrupted?

## So, once again: How efficient can a WWTP be run?

- The more sensitive and complicated the process, the more treatment might get interrupted, either for maintenance or for repair.
- Again, this may require a well skilled team with the underlying management & operations system.
- Again, this may need a team located close or not too far from the plant to be on site whenever the treatment interruption arises.

### Same problems:

- i. Costs of such a sophisticated team and its degree of getting organized is high.
- ii. In case an investor only enjoys few WWTPs within a certain area this will generate again probably a high number of skilled workers.
- iii. Team might sit idle if no problems occur, generating costs with no extra return.

# Cost Efficiency for Built Space

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- Design and O&M of a WWTP has a high impact on the size of the built space.
- Some wastewater treatment technologies and processes use up less space while still being able to treat the same amount of wastewater.

# Cost Efficiency in Construction Issues

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- Construction period and construction costs can be reduced.
- The built environment of the WWTP can be run with less energy in regard to processing the wastewater as the volume in such a basin is smaller.

## Land Cost Issues

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- Land use rights and sqm-prices are cost factors in densely populated areas.
- Municipal areas formerly not attractive as urban settlements either for business or for living might change. They may even exceed the value of a big & profitable WWTP in an urban area with quickly rising sqm-prices.
- With an adapted wastewater treatment technology in a WWTP that consumes less land the area could even continue growing in value while keeping the adapted WWTP in place.
- WWTP may become an asset for the value of the area.

# Adaptable Concession Relations

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- For municipal governments and its urban planning & upgrading policies it is crucial that a public utility can be adapted.
- It must be kept in line with the fast growth rate of the municipality.

## Example:

- Interest of the WWTP owner/investor and the municipal government diverged after only a small portion of the concession period had elapsed.
- Speed of urban growth process had overtaken some contractual arrangements.
- To get the concessionaire's income & profit situation as well as the municipal public utilities' needs back into balance parts or even complete contracts needed to be renegotiated.

# I-PPP Can Now Prove Its Benefits

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## I-PPP solves the issue of diverging interests: cost vs. tariff

- The partners will appreciate each other's standpoint
- United interest allows public utility to earn a healthy profit
- Financial institutions will be able to lend funds on a private base

## Benefit:

- Public utility service back in quality at reasonable tariff level
- Financial means: fully market based, no public funding



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Thank you!

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