



*Empowered lives.  
Resilient nations.*

## **“PPP Masterclass” for senior officials from Belarus**

**Geneva (Palais des Nations, Conference Room XV) and Bern, Switzerland, 7-11 July 2014**

### **Municipal PPPs : urban transport, approach & case studies**

**Speaker:**

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*10 July 2014*

# Overview

**I. Introduction: PPP in Urban Transport a very large area !**

**II. PPP models & case studies in transport services:  
urban bus operations**

**III. Providing urban transp. infrastructure: via PPP**

**IV. Discussion and Conclusions**

# Introduction:

## PPP in Urban Transport a very large area !

### ➤ **Broad variety of transport modes**

*publ. transport (bus, tram/metro), motorists / individuals, “water”, ITS, parking, bikes, intermodal projects...*

### ➤ “Bundled” in

- > **Infrastructure (networks) &**
- > **Transportation / other services**

### ➤ **Interrelated with other infra / services (IT, etc.)**

### ➤ **Creating and respecting distinct roles :**

> **Regulator**

**Infra / network**

> **Provider, Operator**

> **Client**

**Transport service**

**Supplier / Client**

# Basic constituents of Transport(ation)

> **Infra (network) // Transp. & other services**

## Who provides

the infra / network // transportation services ?

> Trend to **unbundle**

Asset & Service Sector / Progress	Infrastructure Asset	O&M /FM	Transport / associated Services
1. one provider for all (Monopoly)	Monopolist provider (Public or private)		
2. Unbundling & Privatization (Demonopolize & Privatize)	1 Provider (Public or private) Competition via concession tender		Competitor 1, competitor 2, competitor 3, ..

# Urban Infra (networks) // Transport & other services

Sector \ Asset & Service	Infrastructure: Network / Estate	O&M / FM	Use of Asset / provide transport services and other
1. One provider for all: e.g. <b>TRAM / Urban Rail</b> (traditionally)	1 single Provider . > Network + management		> Transportation service
	1 single Provider . > Network + management		> Transportation service
2. From single provider to "soft unbundling" e.g. <b>Urban Rail</b>	1 Provider (Public or private) Competition: concession tender		Several competitors 1, 2, 3, 4, ... > Transport service,
3. Unbundling e.g. <b>Bus</b> (public service)	1 Provider (Public)		
	1 Provider (Public or private) Competition: concession tender		Several competitors 1, 2, 3, 4, ... > PPP contracts
3. Unbundling: Public networks private use, e.g. <b>ROADS</b>	1 Provider (Public or private) Competition: concession tender		Private operators (citizens / motorists, private buses, taxis, freight forwarders)
4. "Water"	1 Provider infra (landing stage), ...		Public / private boat operators
<i>Not to forget: Intelligent Transport systems (ITS), Parking, systems Intermodality, Bike systems</i>			



Public operator

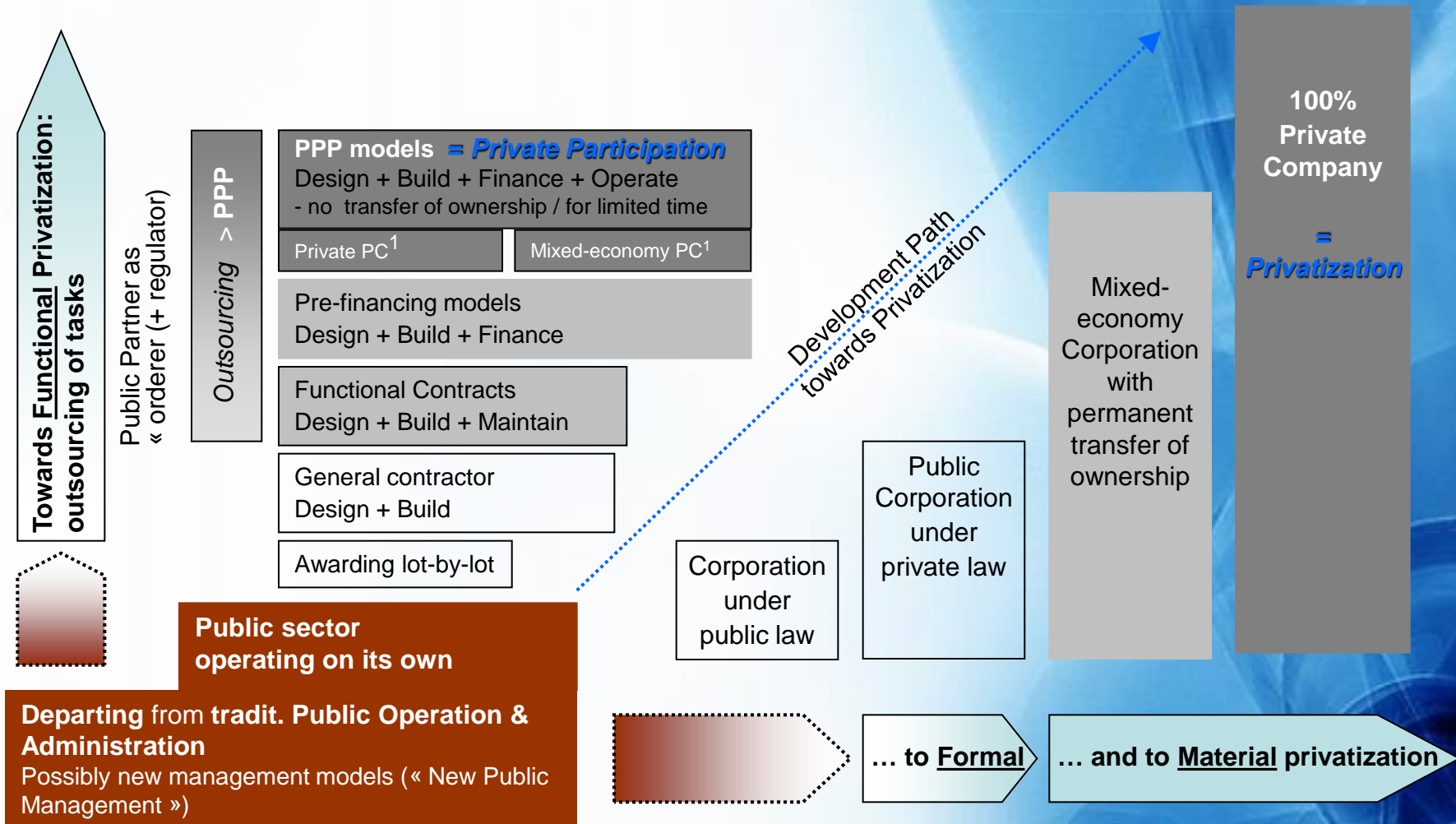


PPP



PPP with private operator

# Difference btw Private Participation (PPP) and Privatization



1. PC = Project Company

Source: Alfen / Weber:

## II. PPP models & case studies: *Urban Bus Operations*

### 1. Traditional public approach

a. / b. **Public Monopoly** with/without Management Contract

### 2. PPP models (*from low to strong privatization*):

a. **Lease**

b. **License contracts**

c. **Far going privatization: Unregulated Entry**

# Reminder: I. trad. public *urban bus operations*

## 1. Traditional Public

### a. Public Monopoly

If all bus services within a city or urban area are provided by one publicly owned company, it's a monopoly.

### b. Public Monopoly with Management Contract

If all bus services within a city or urban area are provided by one publicly owned company it's a public monopoly. If a team of managers, usually from the private sector, is engaged under contract to run the system, it's described as a public monopoly with management contract.



## II. PPP for *urban bus operations* – Why ?

**Most common problems faced by bus systems** (affect their efficiency, to be redressed by private participation and better planning):

- Too few buses or inadequate service capacity
- Unreliable service / Irregular frequency
- Poor route coverage
- Excessive transfer requirements between routes
- Excessive fares
- Low profitability
- Excessive subsidy requirement
- Poor quality vehicles
- Poor safety performance
- Traffic congestion caused by buses
- Pollution caused by buses
- Mistreatment of passengers
- Violence between operators

**Source:** <http://www.ppiaf.org/sites/ppiaf.org/files/documents/toolkits/UrbanBusToolkit/assets/1/1b/1b.html>

## II. PPP options for public *urban bus operations*

### 2. Taping private sector efficiency via PPP models

**a. Lease**

**b. Operation and maintenance contracts**

**c. Far going privatization**

PPP contracts for busses can:

- cover a specified route or a specified group of routes;
- give the exclusive right to operate bus services in an area that forms all or a substantial part of a city.

## II. PPP options for public *urban bus operations*

### I. Lease contracts (typically 5 - 7 years)

#### 1. Cost-Plus contract

The authority issues a contract for a private operator in charge of procuring, operating and maintaining a bus fleet and system (for a specified route or area). The bus transport authority hires the conductor who collects all the revenues. The private operator is paid per kilometre, depending on the operating cost of each bus.

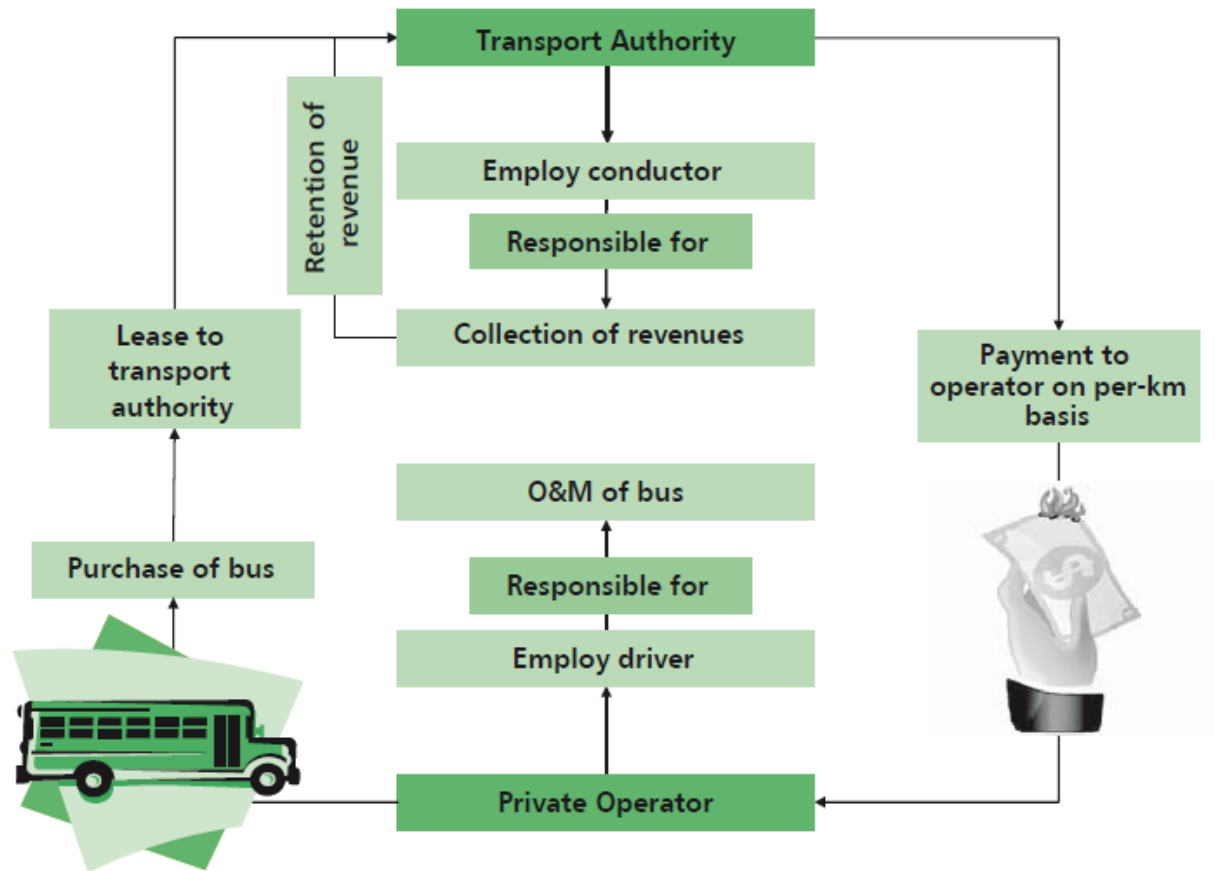
*Advantage:* ensures a quick increase in service capacity and in operating efficiency.

*Disadvantage:* The bus transport authority has a high liability, reimbursing all operating cost incurred by the private operator.

#### **Successful case studies (India):**

- Pune Mahanagar Parivahan Mahamandal Limited
- Jaipur City Transport Services Limited

# Structure of a Cost-Plus contract:



Source: Tool Kit for Public-Private Partnerships in Urban Bus Transport for the State of Maharashtra, India, 2011

## II. PPP options for public *urban bus operations*

### 2. Net-Cost Contract

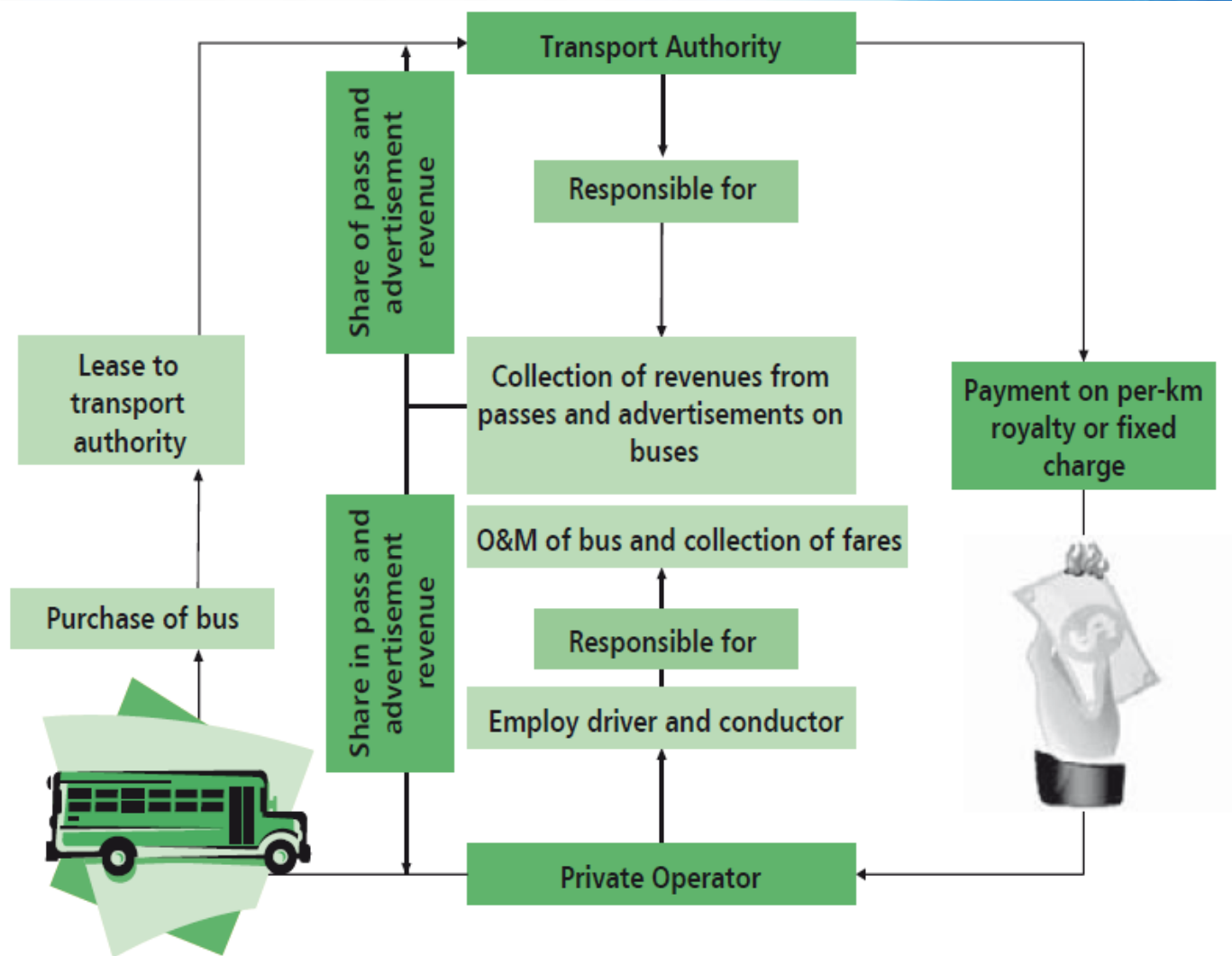
The authority issues a contract for a private operator in charge of procuring, operating and maintaining a bus fleet (for a specified route or area). He also collects and retains all the revenues (mainly tickets, possibly advertisement income, too.) Under a net-cost contract, the authority pays the operator a subsidy if the bus routes are unprofitable. If the routes are profitable, the authority receives a per-km royalty or fixed charge from the operator.

*Advantage:* through competition the transport authority minimizes the cost it has to bear for the transport service, limiting it to a subsidy. Ideally, it even receives a royalty or fixed charge per km.

#### **Successful case studies (India):**

- Indore City Transport Services Limited

# Structure of a Net-Cost Contract



Source: Tool Kit for Public-Private Partnerships in Urban Bus Transport for the State of Maharashtra, India, 2011

## II. PPP options for public *urban bus operations*

### 3. Gross-Cost Contract

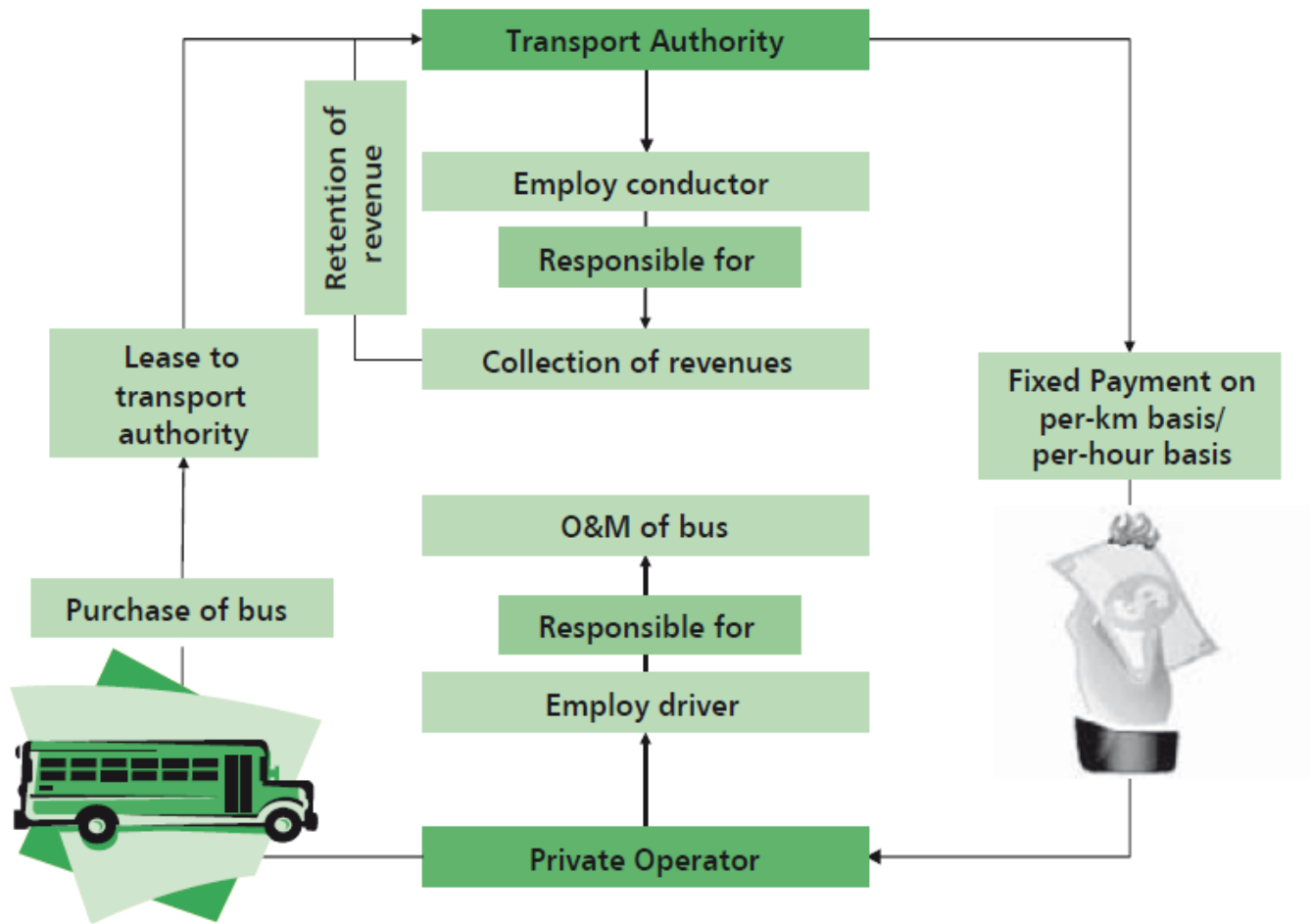
A gross-cost contract pays the operator, who owns and runs the busses, to provide service on a specific route or area for a set period. All revenue collected are transferred to the authority who selects the private operator, who offers to provide the required service at the lowest cost. The operator receives a fixed payment that can take the form of an hourly charge or of a per-km charge.

*Advantage:* as the liability of the transport authority is limited to the negotiated amount of payments to be made to the private operator as consideration for its services. Thus, in a gross-cost contract a part of the operating risk is transferred to the private operator. He has the incentive to induce efficiencies in operations to increase his profit margin. A gross-cost contract thus achieves more operating efficiency because the operator's profit will be directly proportional to the cost savings, as revenues are fixed.

#### **Successful case studies** (international):

- Copenhagen (Denmark)
- London (United Kingdom), and other cities

# Structure of a Gross-Cost Contract:



**Source:** *Tool Kit for Public-Private Partnerships in Urban Bus Transport for the State of Maharashtra, India, 2011*



## II. PPP options for public *urban bus operations*

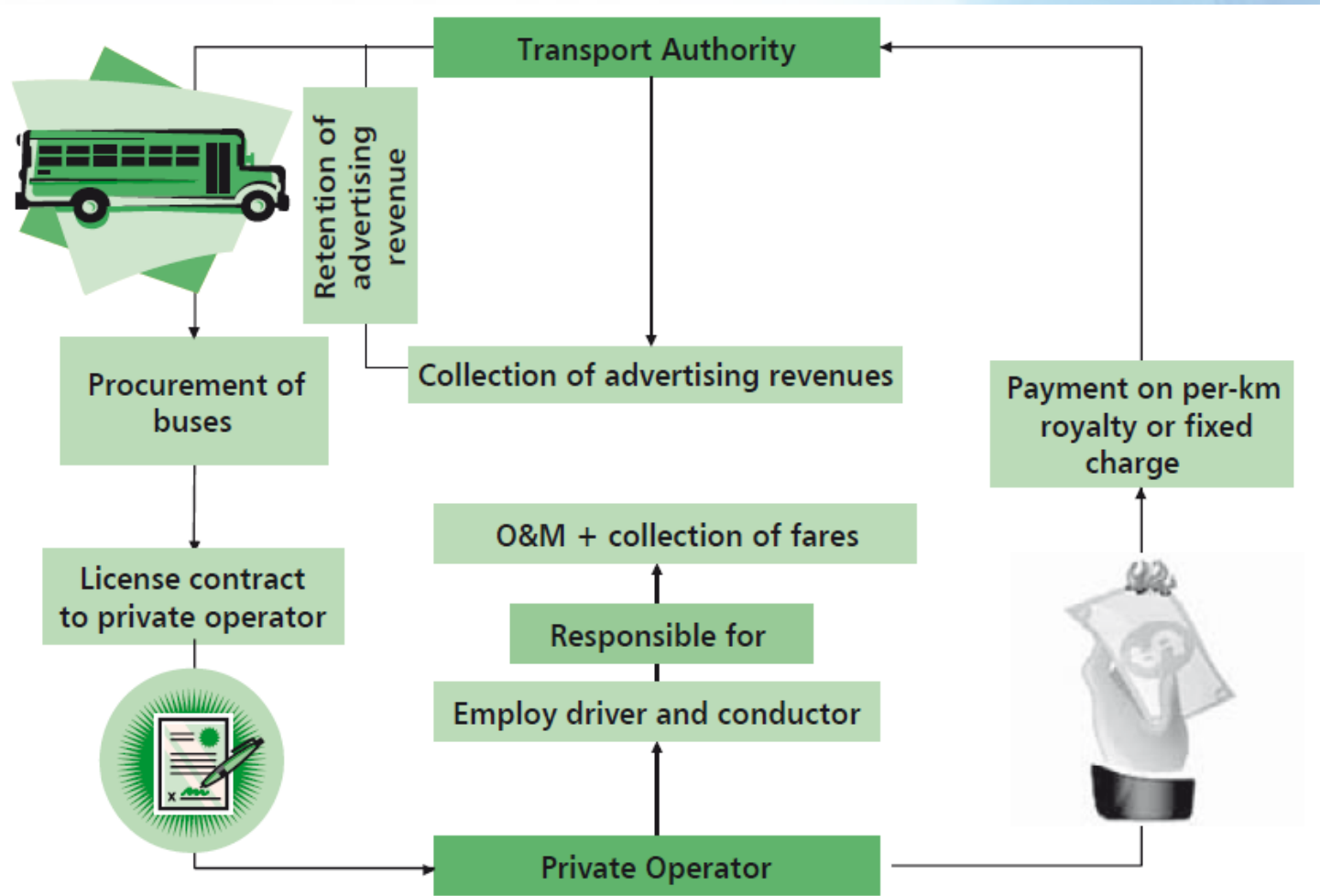
### II. Operation and Maintenance contracts (typically 5 - 7 years)

#### 1. Licensing Contract

The bus transport authority procures the busses that receive a subsidy by the central government, whilst the private operator pays the bus transport authority's share. His main tasks consist in operating and maintaining the busses, collect revenues and to remit to the bus transport authority a per-km royalty or fixed charge.

*Advantage:* the liability of the transport authority is limited and most of operating risk is transferred to the private operator. He has the incentive to induce efficiencies in operations to increase his profit margin. He also has to conduct customer relationship management to increase not the satisfaction of the users and their use of the transport service.

# Structure of a Licensing Contract



**Source:** *Tool Kit for Public-Private Partnerships in Urban Bus Transport for the State of Maharashtra, India, 2011*

## II. PPP options for public *urban bus operations*

### III. Far going de-regulation and privatization

#### **Unregulated market entry with / without quality control**

The public authority may allow free entry to the public transport market, and in the case of quality control this is subject only to the requirement that the vehicles used meet a specified set of standards (in addition to general vehicle standards and approval). These standards should be reasonably high.

# III. Provide urban transp. infrastructure: via PPP

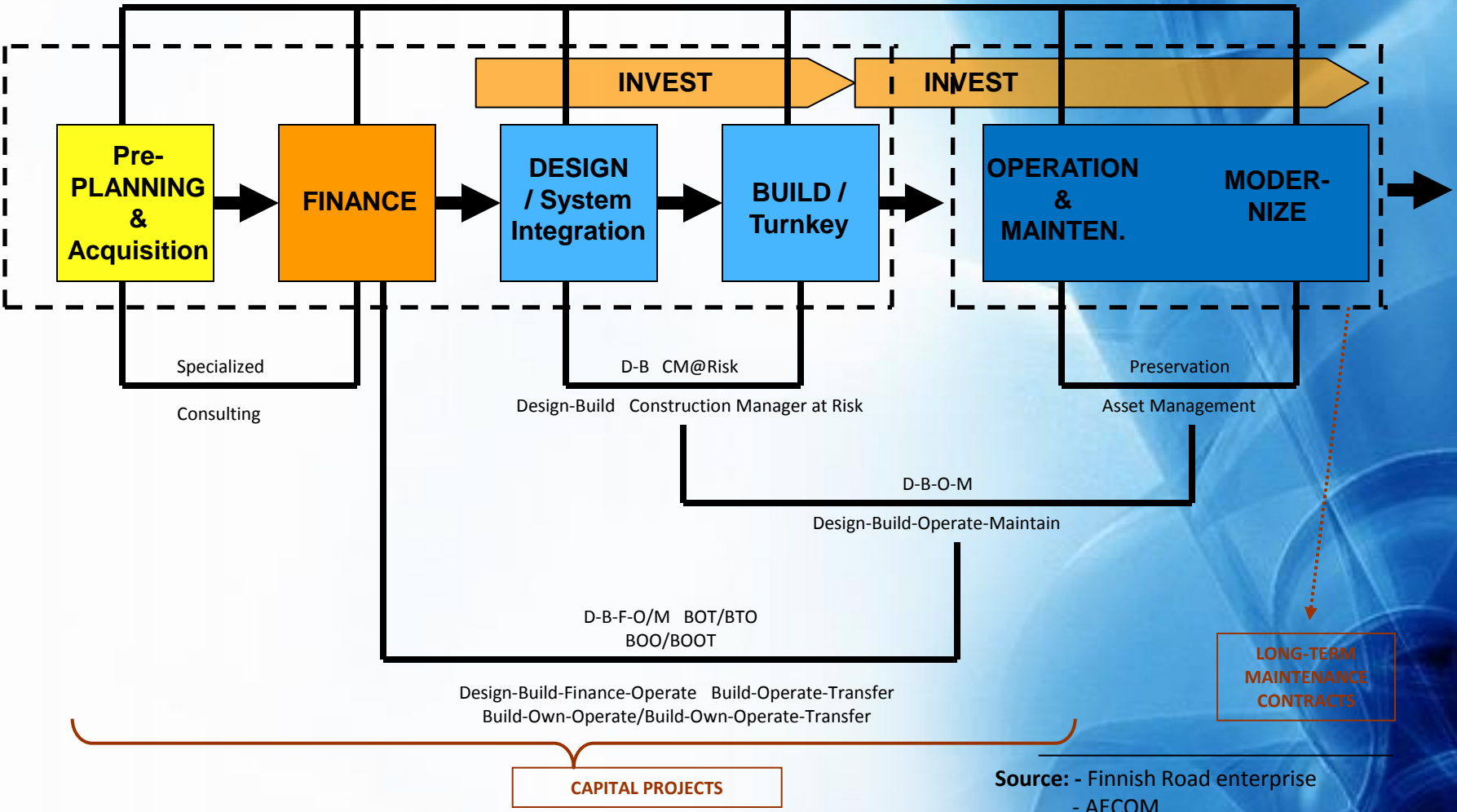
## Infrastructure & Networks

- Road networks
  - + dedicated bus lanes
  - + dedicated bicycle lanes and public e-bike service
  - + ITS services & public lighting
- Parking garages & e-charging services
- Dedicated tram network / rail network / metro networks

Linking infra networks & modes with IT and energy networks

-> smart City transport

# Reminder: transp. Infra PPPs phases & Contracts



Source: - Finnish Road enterprise  
- AECOM



**PPPs in Urban Transport Infrastructure:  
City Street maintenance projects**

# Case study: Portsmouth City Streets

A city of 190 000 inhabitants



# Integrated Urban road PPPs: Case studies

## Case study: Portsmouth City Streets

Ensign Highways (Colas subsidiary ) was awarded in 2004 two-phased road rehabilitation and maintenance contract, 25-year, GBP 500 / Euro 689 million:

**1<sup>st</sup> phase: 2004 – 2009: massive regeneration programme**, finished on time in 2009. During the first 5 years the network must be brought to a certain standard :

- Road Pavement - 480 km of streets and roads
- Footways
- Street Lighting (19 000 units)
- 84 Bridges and Structures



# Case study: Portsmouth City Streets

## 2<sup>nd</sup> phase: 2009 – 2029: Highway Management contract:

Standard of the **regeneration programme** must be met each year during the contract period (20 years). including street cleansing, winter maintenance and emergencies; “fence” to “fence”.

- **Task:** management and maintenance of the roads of Portsmouth, UK. At a specified level of service that must be kept to at all times
- **Contract type:** Private Financing Initiative (PFI) contract includes associated assets and services such as lighting, inspection and maintenance of traffic lights and traffic management technology, drainage and response maintenance.
- **Payment mechanism:** fixed monthly fee of 1 359 000 £; + additional revenues based on a “shadow toll” of 1,15 £ per truck; deductions (penalties in case of non-performance)

# Case study: Portsmouth City Streets

## How to tap private sector efficiency?

### Availability Payment characteristics:

- A monthly fixed fee, indexed, and subject to deductions in case of failure to meet the specifications
- During the first five years, this payment steps up as long as the network conditions improve

**Deduction penalty regime** quite sophisticated :The payments are subject to deductions for failure to meet minimum service standard.

1<sup>st</sup> ensure the standard related to the network condition

2<sup>nd</sup> ensure the level of services is met

3<sup>rd</sup> ensure that contract is well monitored

4<sup>th</sup> the contract is based on self controlling the performances

# Integrated Urban road PPPs: other case studies

## **Sheffield City highway PFI (2012):**

- £2 billion PFI concession
- for a period of 25 years
- Tasks: rehabilitation and ongoing maintenance of 1,180 miles of road, 2,050 miles of footway, 36,000 highway trees, 480 traffic signals, 68,000 street lights, over 18,000 items of street furniture and 12,700 street name plates. The contract will also include services such as street cleaning, winter gritting and landscape maintenance.



**PPPs in Urban Transport Infrastructure:  
Intelligent Transport Systems & Lighting**

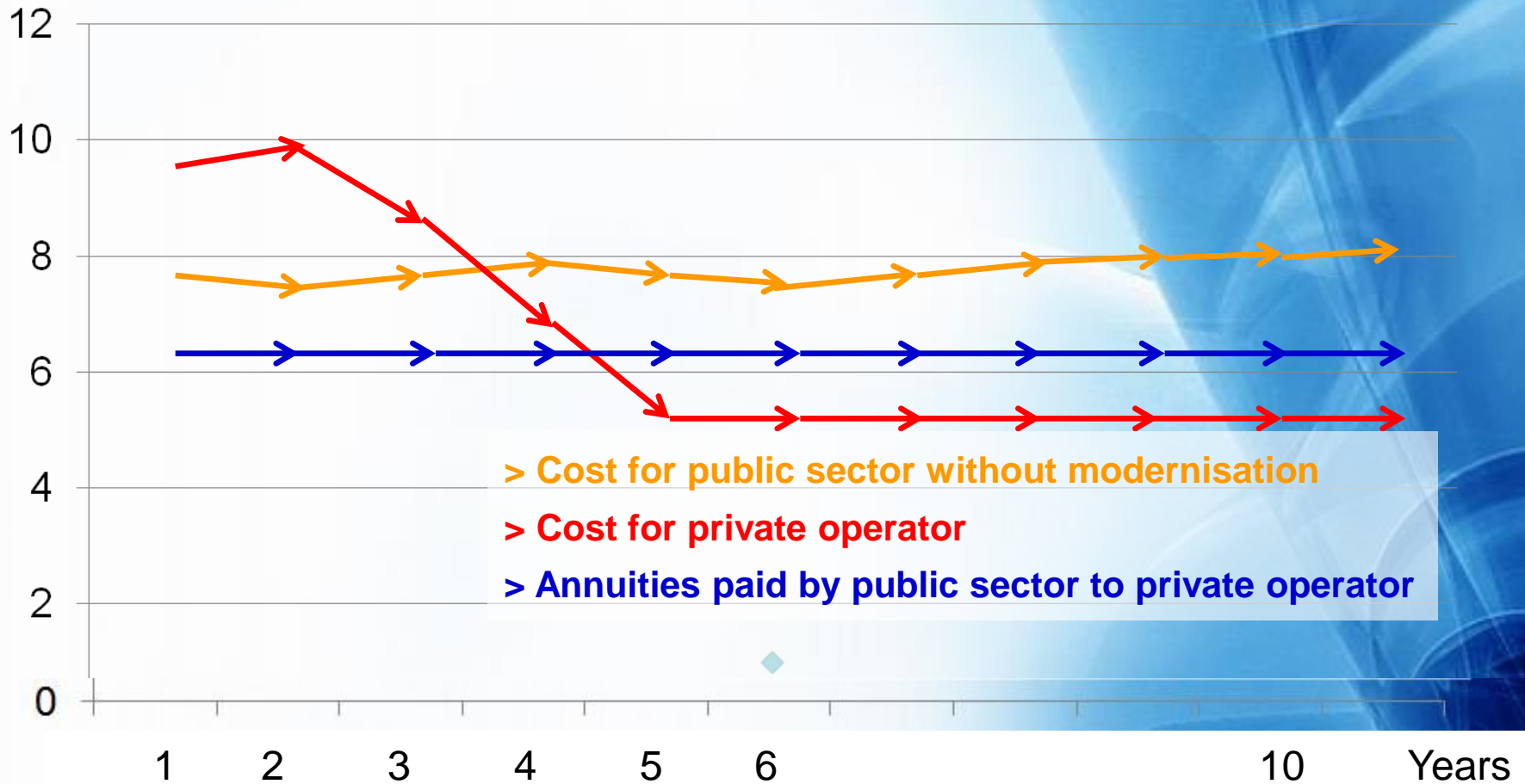
# Modernization of ITS and Public lighting via PPP

- **Modernization of ITS, example traffic lights** and programming to energy saving LED technology, with additional measures for optimization. Up to 90% of electricity savings can be achieved (depending on the state of the currently used technology that is changed). Traffic management improved.
  - **Modernization of Public lighting to energy saving technology.** Up to 60% savings in electricity can be achieved (depending on the state of the currently used technology that is changed).
- > refinancing the investment via energy savings, tapping private efficiency via PPP management contracts, or other models

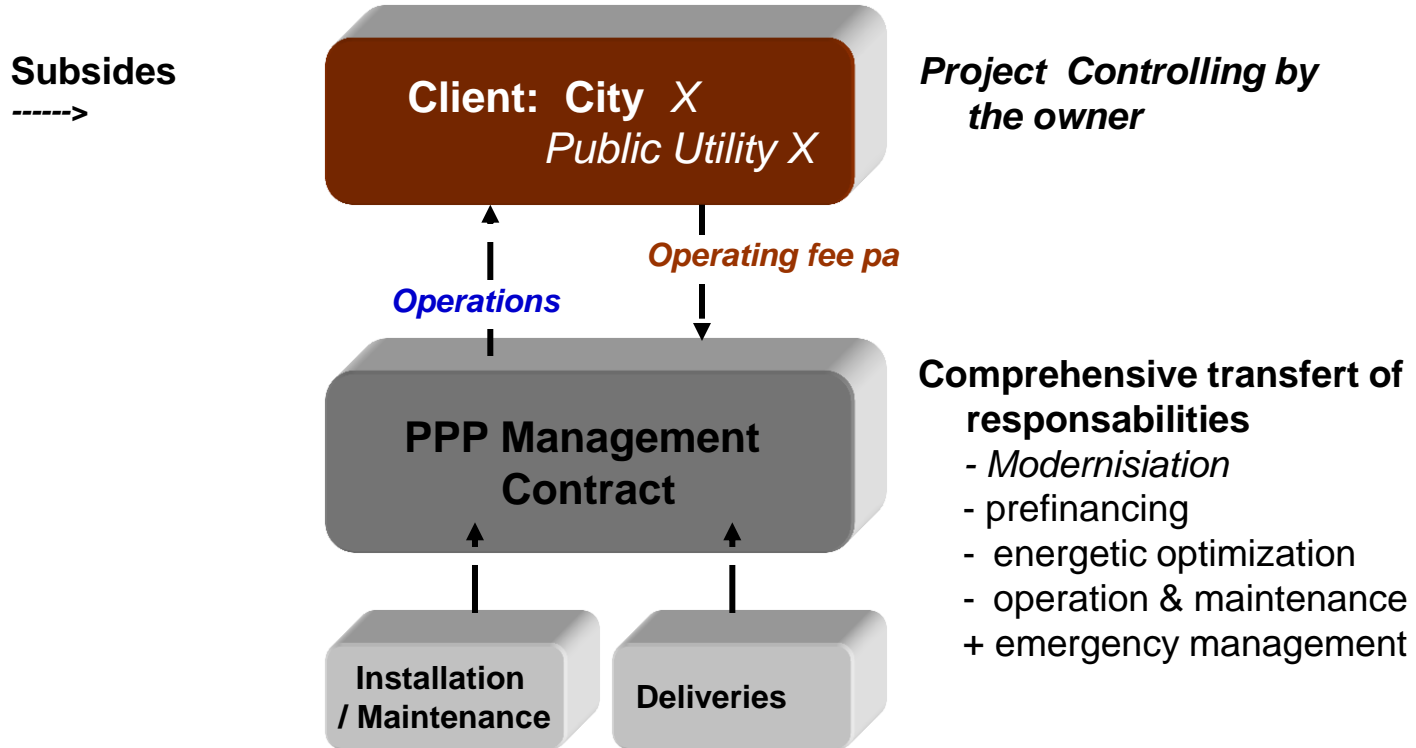


# Financial Profile of Traffic / Public Lighting Projects, with PPP option for modernization & operation

Cost /  
Annuity payments for operator



# PPP Management Contract for ITS or Public lighting



## Case studies: ITS / Urban traffic control / Lighting

<b>Budapest, Hungary, 2006</b> Replaced: 33.000 LED signal heads and 220 controllers Financing through energy saving and optimized service and maintenance <i>- Project financed itself over 8 year period !!!</i> <i>- Electricity savings of 85% guaranteed, 90% achieved!</i>	€ 20'800'000
<b>Prague, Czech Republic, 2009</b> Financing, installation, rehabilitation, service and maintenance of the whole city traffic management system	€ 165'000'000
<b>Public lighting:</b> See good results of projects in NL & De (subsidiaries of Alliander), A (E-Werke Wels)	



## **IV. Discussion and Conclusions**

# Annexes

# Economic Infrastructure and Services

## Social Infrastructure and Services

<b>Transport</b> <i>(Networks &amp; Services)</i>	<b>Public utilities</b> <i>(generation &amp; transmission)</i>	<b>Public utilities</b> <i>(disposal)</i>	<b>Communications</b> <i>(Networks &amp; Services)</i>	
<b>Land transport</b> Road Rail Public Transport Inland Waterways <i>(also see multimodal)</i>	<b>Energy</b>		<b>Telecommunications</b> Fixed lines Mobile Broadband	<b>Health</b> Diagnosis Therapy / Treatment Care Rehabilitation  <b>Taking care of the elderly</b>
<b>Water</b> <i>(overseas &amp; costal)</i> Ports & Maritime Transport	<b>Electricity</b> Coal Oil / Gas Atomic  <b>Renewable Energies</b> Sun Water Wind Bio mass	<b>Heating</b> Oil Atomic Bio mass	<b>Information Technology</b> E-Government	<b>Education</b> Children / adolescents Adults Elderly  <b>Culture</b>
<b>Air</b> Airports, Services, Airlines, Traffic Control	<b>Energy distribution</b>  <b>Long-distance heating</b>  <b>Gas</b> Storing Transport Distribution	<b>Waste</b> Households Industrial		<b>Sports</b> Mass sports Competition <b>Leisure</b>  <b>Administration</b>  <b>Safety and security</b> Penitentiary system Policy Security
<b>Multimodal</b> Inland terminals (road, rail, ...), Cruise terminals	<b>Water</b>			
<b>Space</b> Observation, Services, Research,...	<b>Fresh water</b> Households Industrial	<b>Waste water / Sewage</b> rain water households industrial		



**THANK YOU FOR YOUR ATTENTION!**

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