

**GPP
2020**

procurement
for a low-carbon
economy



Consip's Approach

GPP 2020 Project: Consip tender models

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Let's get started...

- About Consip S.p.A
- Print & Copy Management
- Joint Procurement of Notebooks
- Joint Leasing of Green Vehicles
- Energy Efficiency approach in the Integrated Energy Service FC



Consip Corporate profile

- Consip S.p.A. is a public stock company set up in 1997 and owned by the Italian Ministry of Economy and Finance (MEF), its sole shareholder.
- Consip's mission is to make the use of public resources more efficient and transparent, by providing tools and skills to public administrations, in order to allow them to perform public purchases and at the same time stimulate a competitive participation of enterprises to public tenders.
- Consip obtained the ISO 9001:2008 quality certification for the “design, implementation and launching of framework contracts and e-marketplaces for the procurement of public Goods and Services, in its role as central purchasing body”.



Consip's Main Activities

Consip's activities involve three main areas:

- Implementation of the Program for the rationalization of public spending on goods and services through the use of ICT (Information and Communication Technology) and innovative procurement tools: framework contracts, marketplace for public administration, framework agreements, dynamic purchasing system, ASP tenders (Central Procurement Area).
- Support to individual administrations along the entire procurement value chain, as well as in its role as the central purchasing body, according to specific bilateral agreements (Vertical Procurement Area).
- Implementation of specific tasks assigned by law or by *ad hoc* administrative acts (Other Initiatives Area).



Print & Copy Management



Print and Copy Management

- Compliance with the last version of Energy Star label
- Green Printing Policy available and low emission limits for ozone, dust, noise
- Toner, paper and energy savings
- Training courses and instruction manual for end users
- Compliance with hazardous substances limits for the supply of toner and ink cartridges.
- Respect of the obligations about collection and treatment of used consumables



Print and Copy Management – «Click and Save»

- Estimated value for Framework Agreement: 54.322.400 Euro
- The service of the Framework Agreement:
 - 1) main services: «Click and Save»
 - 2) an optional service: «Office Fleet Management»

The “C&S” provides:

- 1) installation of office equipment
- 2) support and maintenance,
- 3) supply of consumption materials (except paper),
- 4) management
- 5) monitoring, optimization and costs rationalization.



Procurement approach – «Click & Save»

Minimum criteria

- Office equipment installed must be in possession of the Energy Star 2.0 label
- The toner and ink cartridges must not contain azo dyes that can release aromatic amines listed in the All. XVII of Regulation (EC) No. 1907/2006. The powder toners and inks must not contain mercury, cadmium, lead, nickel and hexavalent chromium
- The office equipments must be designed for disassembly
- It is mandatory to provide an instruction manual with reference to environmental impacts. The instruction manual must be provided in electronic format
- Noise has to be:
 - For monochrome printing mode, within the limits of $LWAd = (59 + 0.35 \times S_{bw})$ dB(A)
 - For color printing mode, within the limits of $LWAd = (61 + 0.3 \times S_{co})$ dB(A)
- Digitization and archiving of documents allows paper documents storage and management with a consequent reduction of paper



Procurement approach – «Click & Save»

Award criteria

- “Click Smartcard” is a service used to manage and control the prints through the use of a user authentication system (badge).
- Online fax
- The supplier can deliver a service that provides an analysis of the organization, and in particular all the actions requested to apply a change management process, with the aim to obtain a resource and energy dematerialization
- Advanced training (management and use of installed office equipment)
- The supplier must provide charge of the old office equipment, but not exceeding n. 5 years from date of purchase
- The supplier can provide a service for the collection of the historical WEE equipment. (traceability of waste)



Procurement approach – «Click & Save»

Contract clauses

- Green Printing Policy
- Double-sided printing functionality
- Threshold of 3300 clicks per year instead of 10.000 prints or copies per year;
- Printing functionality of two or more pages per sheet
- Support the use of recycled paper from all installed office equipment



Print and Copy Management «Office Fleet Management»

The “OFM” provides:

- 1) support and maintenance,
- 2) supply of consumption materials (except paper),
- 3) monitoring and reporting



Procurement approach – «Office Fleet Management»

Minimum criteria

- The toner and ink cartridges must not contain azo dyes that can release aromatic amines listed in the All. XVII of Regulation (EC) No. 1907/2006. The powder toners and inks must not contain mercury, cadmium, lead, nickel and hexavalent chromium

Contract clauses

- provide a Total Cost of Ownership (TCO) report: the Supplier shall monitor all associated costs of the service including office equipment, installation, supply of consumable materials, maintenance, waste treatment and disposal.
- implementation of all activities related to the withdrawal collection and processing of consumable materials, including toner and any parts of the office equipment installed



Assumed scenarios

To analyze the benefits of the Framework Agreement adoption, three scenarios were assumed :

Best scenario

1

All users will be served by workgroup printers. 4/5 of workgroup printers are in B/W, the remaining 1/5 are color workgroup printers

Number of b/w «Workgroup» printers: 2840
Number of color«Workgroup» printers: 710

Total annual electricity consumption: 395.555
(kWh)



Assumed scenarios

Scenario taken as a reference to calculate the benefits of the Framework Agreement adoption

2

For each 100 users, 10 users will continue to have color personal printer. The remaining users will be served by workgroup printers (1 every 10 users). 4/5 of workgroup printers are in B/W, the remaining 1/5 are color workgroup printers

Number of b/w «Workgroup» printers : 2556
Number of color«Workgroup» printers: 639
Number of color personal printers: 3550

Total annual electricity consumption : 608.556
(kWh)

3

For each 100 users, 10 users will continue to have color personal printer. The remaining users will be served by workgroup (1 every 10 users) and departmental printer (multifunction) (1 every 60 users). 4/5 of workgroup printers and departmental printers are in B/W, the remaining 1/5 are color workgroup printers

Number of b/w «Workgroup» printers : 2556
Number of color«Workgroup» printers : 639
Number of color personal printers : 3550
Number of color departmental printers: 106
Number of b/w departmental printers: 426

Total annual electricity consumption : 739.753,21
(kWh)



Calculation method

- To calculate the energy and CO₂ reduction and cost savings following the adoption of the Framework contract, we compared the starting scenario with a possible scenario deriving from the adoption of the Framework Agreement. In the starting scenario every user has a personal printer (B/W) and a departmental printer (multifunction) serving 60 users
- Equipment Lifetime is 5 years
- The conversion factor 0,64127 kg/kWh (source of information: Ecoinvent database for Italy) is used to obtain CO₂ savings from energy savings (kWh);
- The conversion factor 7,02 €/tons (source of information: Sendeco2) is used to obtain cost savings from non CO₂ emission;



Calculation method

- The conversion factor of 10 gr of CO₂ per paper (source of information: DG Environment EU Commission) is used to obtain emission of CO₂ from a production of one sheet of paper
- The conversion factor 0,20 €/kWh (source of information: European Commission DG Environment) is able to transform the use of energy in economic cost.



Benefits in the adoption of the Print&Copy service

Energy saving, CO2 and paper emissions			Economic saving		
	CO ₂ Emissions	Energy Consumption		Energy and CO2 emission cost (€/year)	Energy and CO2 emission cost (€/life cycle)
The existing printer fleet	4.807,3 t CO ₂ e/year	7.496.535 kWh/year	The existing printer fleet	1.533.054,27 (€)	7.665.271 (€)
The Print & Copy (2°) scenario of printer fleet	390,249 t CO ₂ e/year	608.556 kWh/year	The Print & Copy (2°) scenario of printer fleet	124.451 (€)	622.255 (€)
Annual savings	4.417 t CO ₂ e/year	6.887.979 kWh/year	Savings	1.408.603 (€)	7.043.016 (€)
Total saving (life cycle)	22.085 t CO ₂ e/life cycle	34.439.895 kWh/ life cycle	Savings for non consuming paper Stack	705.456 (€/year)	3.527.280 (€/life cycle)
	Savings from paper consumption. Each user is limited to use its maximum quantity of clicks		Cost saving for not emission CO2	4.127(€/year)	20.635 (€/life cycle)
Savings	293.940.000 (Number of paper)	3.527.280 (€)	Total economic saving	2.118.186 (€/year)	10.590.931 (€/life cycle)
CO2 Saved	2.939 (tons)	20.635 (€/tons)			



Benefits in the adoption of the Print&Copy service

Strategic	Organizational
<ul style="list-style-type: none"> • efficiency/flexibility in printing processes • renewal of the technology park • outsourcing and centralized management of the office equipment; 	<ul style="list-style-type: none"> • security of print output • advance stamp function • monitoring, reporting, custom profiling, training and constant review of the SLA • constant assistance and support to the users and for the entire duration of the contract • Provision of training courses to implement policy of change management
Economic	Enviromental
<ul style="list-style-type: none"> • control and cost rationalization • optimization of the installed office devices and optimization of the use of available office functions • elimination of the waste management and storage management of consumed materials (Inkjet and cartridges) 	<ul style="list-style-type: none"> • reduction of energy consumption • creation of printing areas that are environmentally sustainable • implementation of “Green Printing Policies” • reduction of paper and consumption materials thanks to the controls on the printed output



Total benefits in the adoption of the Print&Copy service

Conventional solution as a benchmark

- Printers already installed
- 24.036,5 t CO2e total emissions
- 37.482.675 kWh consumption per life cycle

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- Printers new technology
- 1.951,2 t CO2 emissions per life cycle
- 3.042.780 kWh consumption per life cycle

Results

- Savings of 22.085 to CO2 emission per life cycle
- Savings of 34.439.895 kWh per life cycle
- Saving from paper and CO2 emissions 3.547.915 (€/life cycle)
- Total saving: 10.590.931 (€/life cycle)



Joint Procurement of Notebooks



Joint Procurement of Notebooks

- Procured laptops 60% better energy efficiency performance than Energy Star Standard
- Total lifetime electricity cost savings of €500.000 for the contract
- Reduction of mercury content for background lighting of LCD screen
- Specifications and award criteria related to battery efficiency, weight of notebook, and sound emissions

Estimated Volumes:

Standard	13.000
Ultra - Flat	9.000
Total	22.000

2 Lotto tendered



Lotto 1	2550 city cars
Lotto 2	580 average cars



Calculation basis

- To calculate the savings achieved a direct comparison was made starting from the low carbon laptops purchased, and compared this to the consumption of a standard Energy Star laptop currently available on the Consip marketplace.
- For this purpose the following models were used:
 - Low carbon solution - Lot 1: Lenovo - ThinkPad L530 2485;
 - Low carbon solution - Lot 2: Toshiba Portegè R930-CNSP
 - Conventional solution: Sony VPC F13M1E
- Energy consumption was assessed using the Energy Star methodology for determining typical electricity consumption (TEC), using data reported on the Energy Star website. TEC is calculated in kWh/year on the basis of energy consumption during idle, sleep and off modes, and defined usage patterns.
- Total savings were obtained based on a lifetime of 5 years, and the quantity of laptops purchased



Calculation basis

- A conversion factor of 0,64127 kg CO₂/kWh (source of information: Ecoinvent database for Italy) was used to obtain CO₂ savings;
- The conversion factor 0,20 €/kWh (source of information: European Commission DG Environment) is able to transform the use of energy in economic cost.
- The conversion factor 7,02 €/tons (source of information: Sendeco2) is used to obtain cost savings from non CO₂ emission;
- The conversion factor 0,000085984522785899 toe/kWh (source of information: World Energy Council) is used to obtain toe savings from non consumption energy;



Achieved results

	CO ₂ e emissions	Energy consumption
Low Carbon Solution	1.250,6 (t CO ₂ e /life cycle)	167,7 (toe/life cycle)
Last Tender	1.648,1 (t CO ₂ e /life cycle)	221,0 (toe/life cycle)
Conventional solution (standard Energy Star)	3.033,2 (t CO ₂ e /life cycle)	406,7 (toe/life cycle)
Total savings: Low Carbon Solution – Last Tender	397,5 t CO ₂ e/life cycle	53,3 toe/life cycle
Total savings: Low Carbon Solution – Conventional Solution (life cycle)	1.782,6 t CO ₂ e/life cycle	239,0 toe/life cycle



Achieved results

	Electricity Cost (year)	Electricity cost (life cycle)
Low Carbon Solution	78.008 (€)	390.040 (€)
Conventional solution (standard Energy Star)	189.200 (€)	946.000 (€)
Last Tender	102.799,2 (€)	513.996 (€)
Savings: Low Carbon Solution – Conventional Solution	111.192 (€/year)	555.960 (€/life cycle)
Savings: Low Carbon Solution – Last Tender	24.791,2 (€/year)	123.956 (€/life cycle)

In addition, for each computer a saving of about €150 has been achieved by extending product lifetime (source: Interview with Consip PC Procurers Specialist) due to a 5 years maintenance service extension and the inclusion of a replacement battery. For 22.000 laptops this gives a total additional saving of **€3.300.000**.



Total benefits

Conventional Solution= benchmark

- 3.033,2 t CO₂e emissions
- 4.730.000,00 kWh consumption per life cycle

GPP 2020 tender Notebook Low Carbon Solution

- 1.250,6 t CO₂e emissions
- 1.950.200,00 kWh consumption per life cycle

Results

- 1.782,6 t CO₂e emissions savings
- 2.779.800,00 kWh consumption per life cycle
- Total saving: 568.473,87 (€/life cycle)



Joint leasing of green vehicles



Joint leasing for Green Vehicles

- €80 million framework contract for vehicle leasing
- Emissions as low as 79 gCO₂/km for passenger cars and 134 gCO₂/km for heavy duty vehicles
- Car sharing service and automated usage monitoring for fleet optimisation

5 Lotto tendered



Lotto 1	2550 city cars
Lotto 2	580 average cars
Lotto 3	520 commercial vehicles
Lotto 4	240 Bi-fuel vehicles
Lotto 5	185 Bi-fuel vehicles



Estimated volumes:

Fuel	Passenger vehicles	Light commercial /heavy duty vehicles
Petrol	1.353	20
Diesel	1.893	465
Electric vehicle	60	55
Hybrid	17	-
Bifuel (methane gas\gasoline)	82	10
Bifuel (LPG\gasoline)	110	10
Total	3.515	560



Calculation basis

- Conventional solution: 4.900 vehicles with an average lifetime distance of 81.059 km (based on the figures from the previous tender), with a total CO₂ emissions of 54.879 t – meaning average emissions of 138 g CO₂/km
- Low carbon solution: 4.075 vehicles with an average lifetime distance of 83.053 km, with a total CO₂ emissions of 35.576 t – meaning average emissions of 105 g CO₂/km
- The conversion factor 0,20 €/kWh (source of information: European Commission DG Environment) is able to transform the use of energy in economic cost.
- The conversion factor 0,000085984522785899 toe/kWh (source of information: World Energy Council) is used to obtain toe savings from non consumption energy;



Achieved results

The following emissions were achieved:

Vehicle category	gCO ₂ /km max limit/ (=conventional solution)	gCO ₂ /km achieved
Passenger cars	130	79 - 113
Vans	150	112
Heavy duty vehicles	225	134 - 169

	CO ₂ emissions (t CO ₂ e/year)	Energy consumption (toe/year)
Low Carbon Solution	35.576	11.990,530
Conventional solution	54.879	17.607,000
Savings	19.303	5.616,469



Achieved results

The following impressive results were achieved in leasing costs:

Lots				
1	2	3	4	5
6,58% reduction	15,76% reduction	3,45% reduction	n.a.	n.a.

Over the vehicle lifetime there is an estimated reduction in fuel consumption costs of €14.229.426 in comparison to the conventional solution. When monetising CO2 emissions at a cost of 4,58 €/ton, this figure rises to €14.318.376



Achieved results

Conventional solution = benchmark

- 54.879 t CO₂ emissions
- 204.769.410 kWh consumption per life cycle

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132 electric vehicles

- 35.576 t CO₂ emissions
- 139.455.330 kWh consumption per life cycle

Results

- Savings 19.303 t CO₂ emissions per life cycle
- Savings 65.314.080 kWh per life cycle
- Total savings of 14.318.376 (€) per life cycle

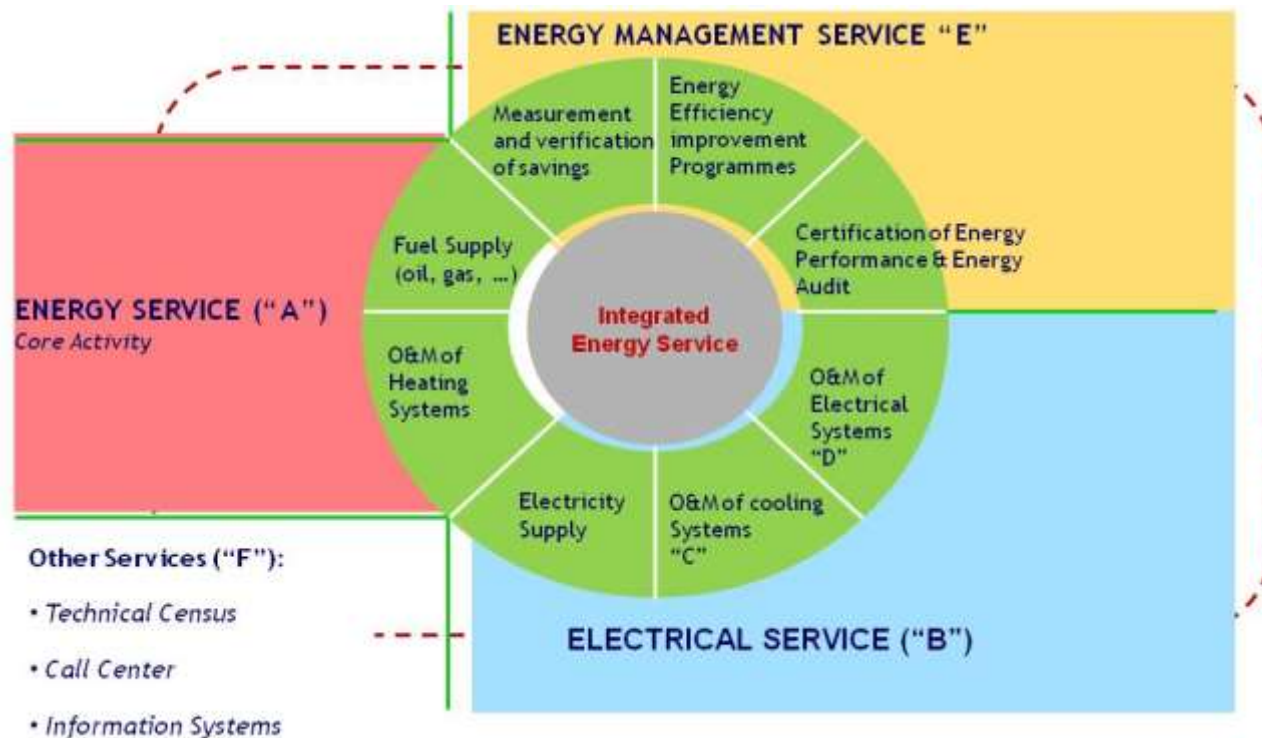


The Integrated Energy Service Framework Contract (FC) - 3rd edition

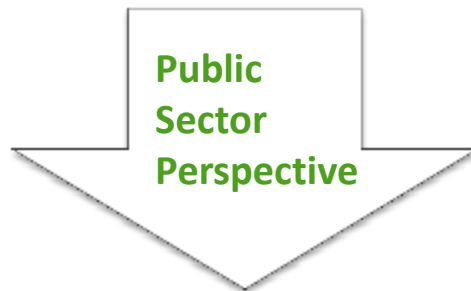


Main Features of the Integrated Energy Service FC

The **Integrated Energy Service** is a performance-based contract for the management of heating, cooling and electrical systems through which the supplier has to guarantee the following: a pre-determined “comfort situation”; energy saving and carbon dioxide reduction.

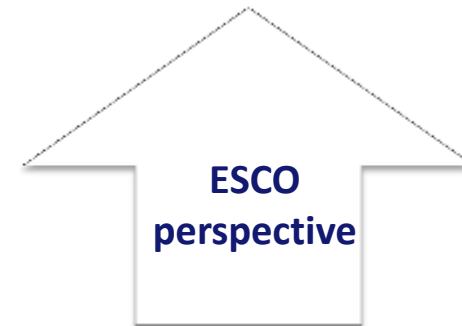


Barriers We Hope to Overcome



- Lack of awareness and information
- Lack of expertise for developing ESCO projects
- Lack of funds

- Tender procedures are perceived as unclear
- Tenders participation requirements seem too restrictive
- Life span of the contracts appears to be not long enough



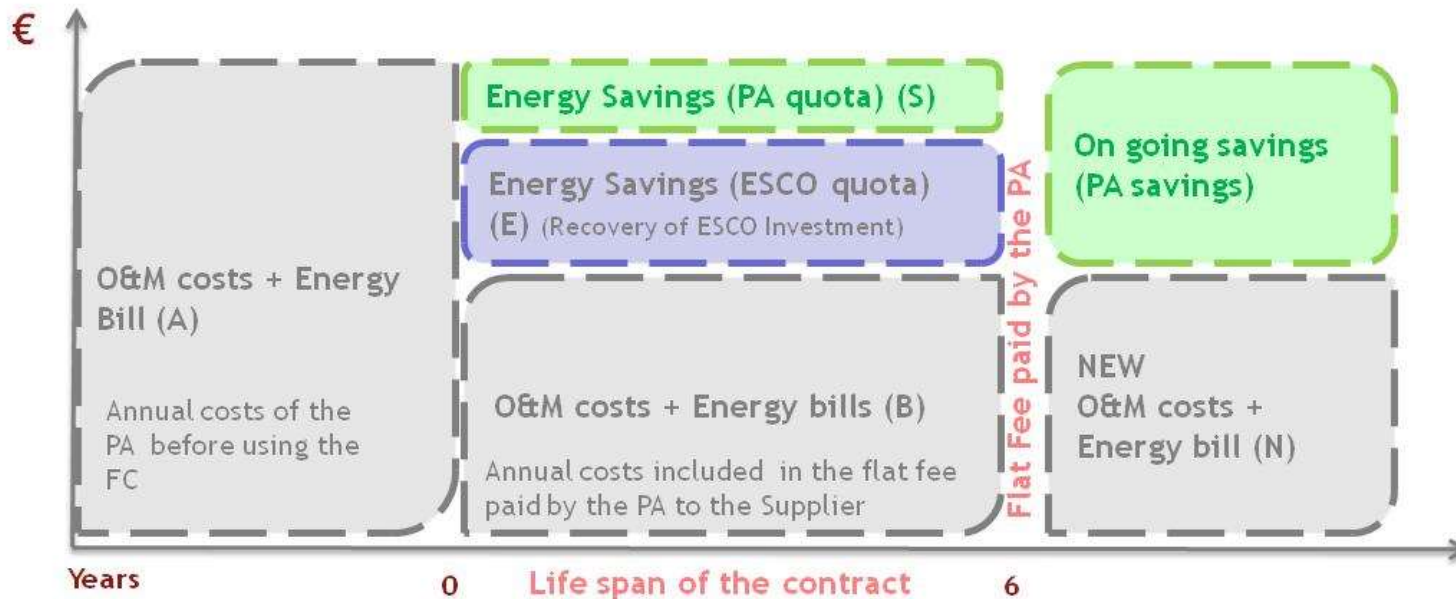
Thanks to its Framework Contracts in the energy field, Consip has helped public sector organisations overcome procurement barriers, improve the energy efficiency of their buildings (or public spaces) and at the same time support the economic growth of the ESCOs. (Energy Service Companies)



Why an Energy Performance Contract?

ConsiP adopts, in this edition of the Integrated Energy Service FC, the “**Shared Saving**” typology of the Energy Performance Contracts (EPCs). This means:

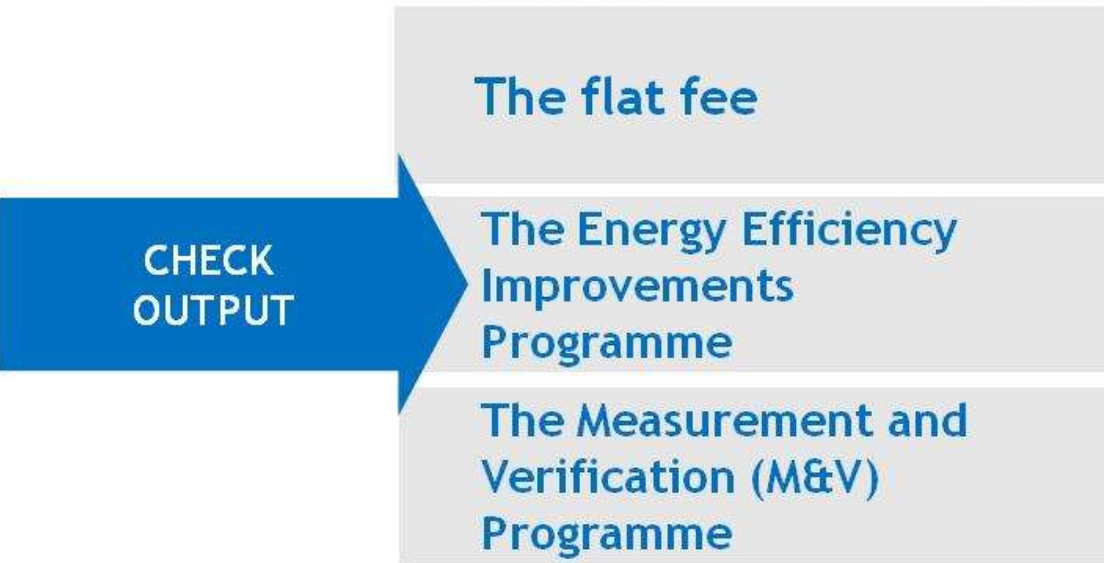
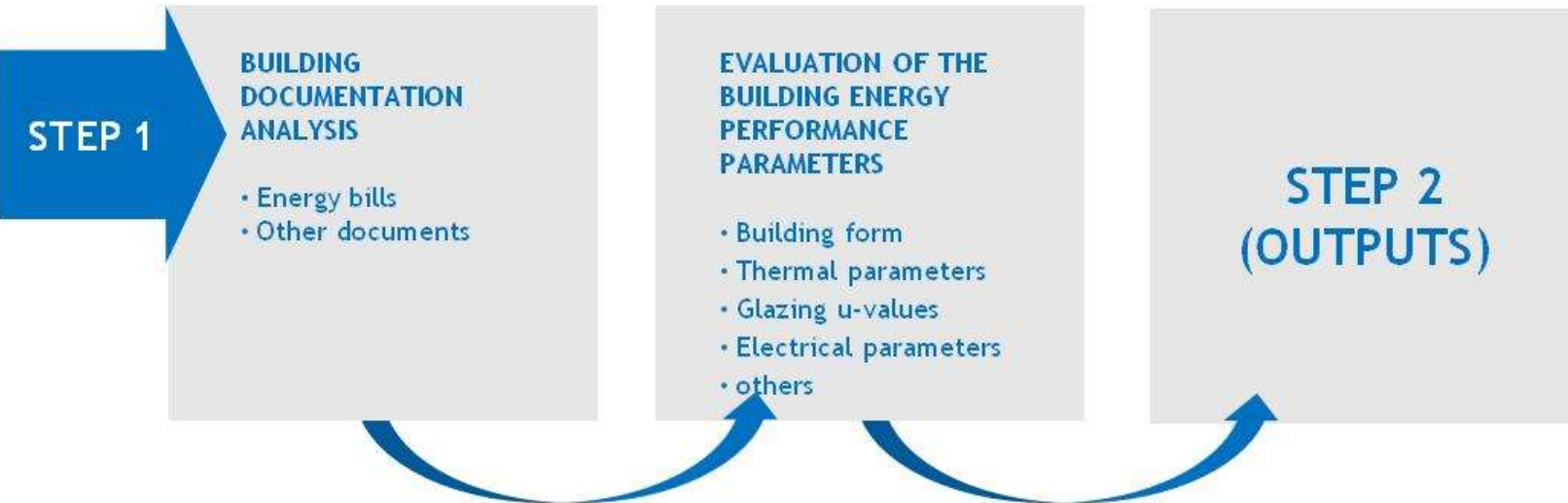
- ✓ Present and future guaranteed energy saving for the PAs
- ✓ No upfront investment or capital expenditure
- ✓ Risk transfer



The PA enjoys an economic advantage since the acceptance of the FC.

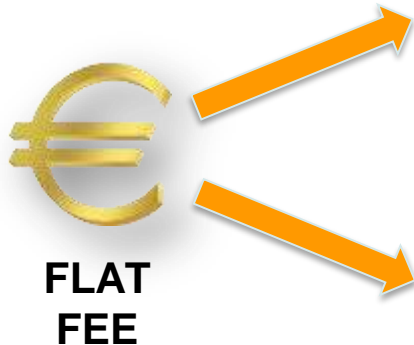


The Energy Check



OUTPUT 1: The Flat Fee

How much should a PA pay for the services?



HEATING QUOTA = E (energy quota) + M (Maintenance)

The component “E” is obtained through a mathematical algorithm based on the ISO 13790. Thanks to this algorithm, the ESCOs are able to calculate the energy needs of the buildings. This represents the "energy baseline".
The component “M” is obtained by computing the technical elements really present in the buildings.

ELECTRICAL QUOTA = E (energy quota) + M (Maintenance)

The component “E” is obtained through a mathematical algorithm based on the historical consumption. Thanks to this algorithm, the ESCOs are able to calculate the energy electrical needs of the buildings. This represents the "energy baseline". The component “M” is obtained by computing the technical elements really present in the buildings.



OUTPUT 2: The Energy Efficiency Programme

2000

Consip Published a FC for the management and the maintenance of Heating Systems.

No energy saving goals.

2006

10 million € ordered = reduction of primary energy need of at least 5 Tons of Oil Equivalent (TOE)

2009

• EPC approach
10 million € ordered = reduction of primary energy need of at least 300 Tons of Oil Equivalent (TOE)

2012

• Shared Saving approach
• Verification of the saving using a M&V System.

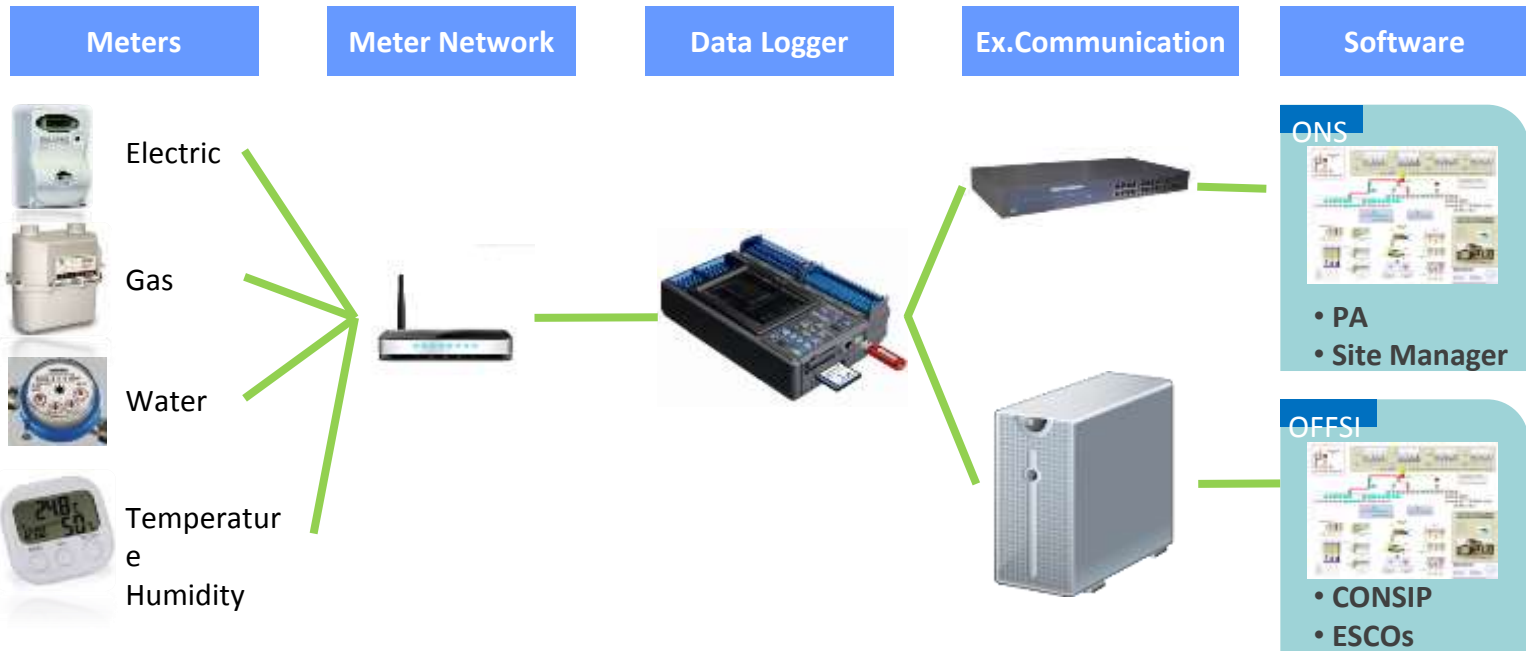
25% less of the thermal consumption

20% less of the electrical consumption



OUTPUT 3: The Measurement and Verification (M&V) Programme

While in the two previous editions of the FC, the results of the energy efficiency programme were certified by the Italian Electrical Energy and Gas Authority: in this edition we've asked our suppliers (ESCOs) to implement a M&V System of energy saving.



What we want!

- ❑ Increased energy saving in the public sector
- ❑ Reduced energy consumption and therefore reduced carbon emissions
- ❑ Enlarged ESCO markets
- ❑ Continued improvement in our efforts toward Energy Efficiency



THANK YOU

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