

IEA/DSM –TaskX – “Performance Contracting” Seminar

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**Experiences in Italy:
Energy Efficiency Certificates,
“Energy Managers”,
Energy Service Companies.**

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THE CHANGING ENERGY MARKET

- Following the Energy market liberalization European **Directives 96/92 CE**(electricity) and **98/30/CE** (natural gas),
in Italy two corresponding Decrees:
n° 79-16.3.99 for electricity, and
n° 164-23.5.2000 for natural gas,
have been issued.
- The liberalization process has radically changed in Italy also the **Energy Efficiency policy**, and the two Decrees state now that the energy **Distributors** shall reach given energy efficiency improvement goals by implementing **DSM** actions, so becoming the responsables for the Energy Saving achievements.
- Twins **EE Decrees** have been consequently issued the **21.4.2001** respectively for Electricity and Gas market, defining the targets to be achieved, and the rules for the E.E. actions and market.

THE ITALIAN ENERGY EFFICIENCY DECREES

- The E.E. Decrees require each Electricity and Gas **Distributor** to achieve definite amounts of primary energy **consumption reduction** by **improving the Energy Efficiency** in the final uses of their customers.
- The objectives must be reached by implementing specific **energy saving projects**, at the user sites conforming the given rules, which shall be evaluated and validated by the Energy Authority – **AEEG** (Autorità per l’Energia Elettrica ed il gas).
- AEEG shall publish the “**Guide Lines**” defining how to plan, implement and evaluate the projects, and control the results.
(draft proposal for public consultation issued last April, but the Guide Lines still to be published by now)
- The projects may be implemented by Distributors, either:
 - **directly**, with specific agreements with their customers, or
 - **indirectly**, through other companies supplying energy services.

NATIONAL ENERGY SAVING TARGETS-Mtoe/y

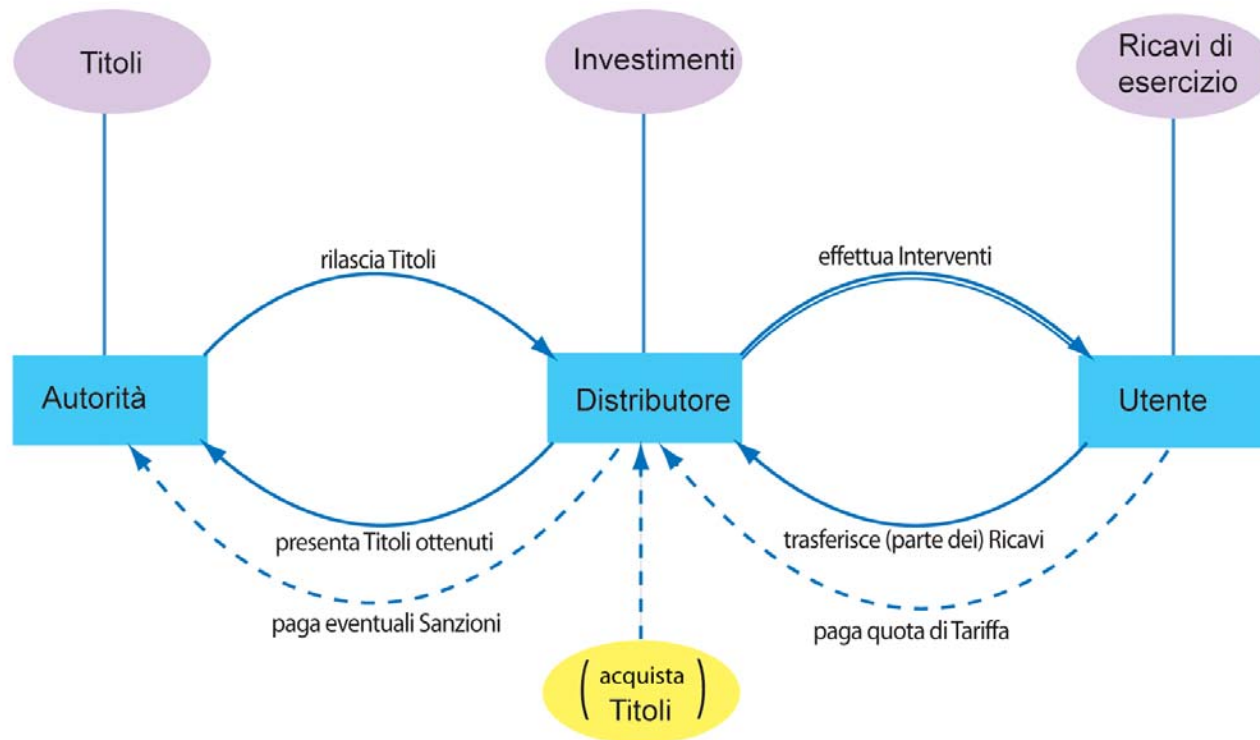
Year	Distributors of			
	electricity		natural gas	
	cumulative	in the year	cumulative	in the year
2002	0,10	+0,10	0,10	+0,10
2003	0,50	+0,40	0,40	+0,30
2004	0,90	+0,40	0,70	+0,30
2005	1,20	+0,30	1,00	+0,30
2006	1,60	+0,40	1,30	+0,30

- Targets for each distributor defined in proportion to the energy distributed.
- At least 50% of the savings must be obtained on the type of energy distributed.
- The savings obtained are taken in account for 5 years max.

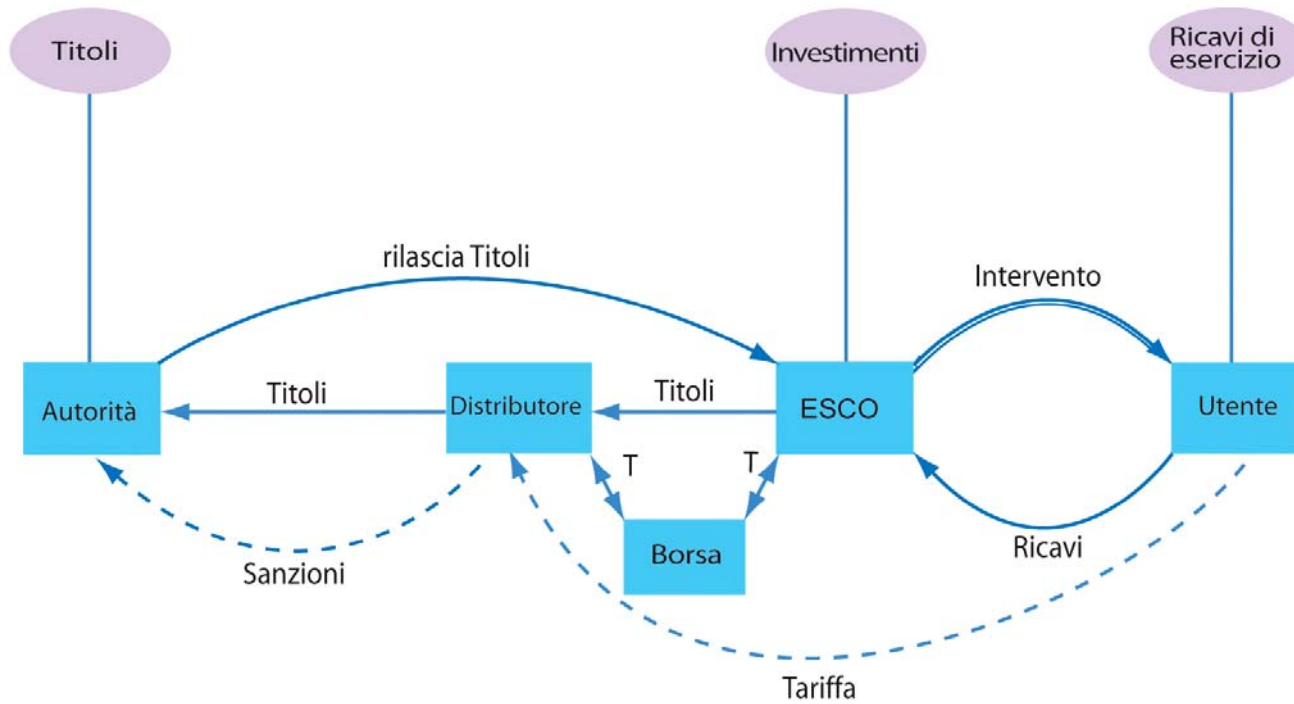
THE ENERGY EFFICIENCY CERTIFICATES

- The EE Decrees have introduced the new “**Titoli di Efficienza Energetica**” (Energy Efficiency certificates-EEC), that can be issued against completed EE projects, in proportion to the saving achieved, to:
 - Distributors
 - their subsidiarias or associated companies,
 - Energy Service Companies (ESCO)
- The EEC are tradable either via **bilateral contracts**, or in the specific “**EEC Exchange**”, to be established and regulated by the Authority, similarly to the “Green Certificates”.
- The Guide lines to be published by AEEG will define the rules for issuing the **EEC** and verifying the targets reached by the Distributors. The Guide lines will also define the **penalties** for non-compliance with the targets and how **to recover part of the costs** born by Distributors to carry over the projects from the electricity and gas tariffs.
- The mechanism of the EEC and the functions and roles of the various actors it is quite complex, and the following schemes may help the undersanding.

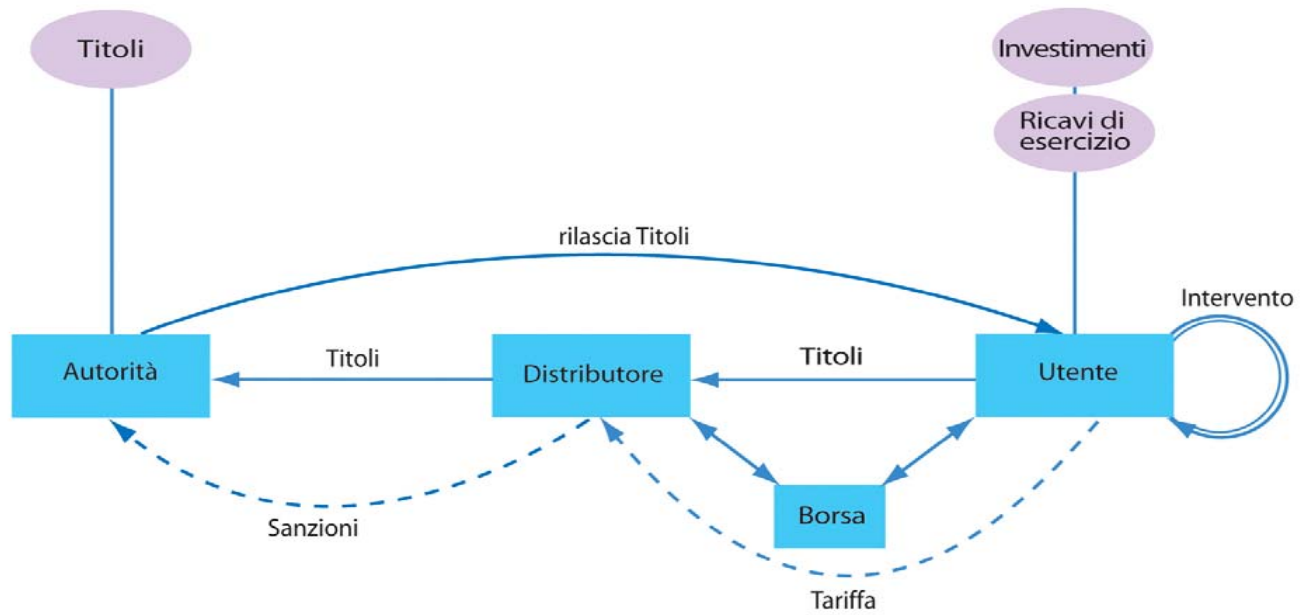
DIRECT MODE



INDIRECT MODE



EEC directly released to the USERS



REMARKS

In our opinion there are some remarks on the EE Decrees that should be evidenced

- The **Users** should have the right to get the EEC for the projects they have implemented.

This would enlarge and improve the EEC Market and increase the potential of results.

(the original thought to exclude them was the fear of too many projects to be evaluated and validated!)

- The evaluation and the **validation of the EE projects** for releasing the EECs seems to be a major road block.

(a possible solution could be the project validation made by certified Energy Managers or experts)

- The **ESCO** will have a major role, but there is the need of a clear definition, and possibly a certification.
- It would be advisable to classify the more than 30 types of technologies, listed in the Decrees Annex, with some kind of economic indicator (average investment required versus possible savings) to correctly address the operators, which may be otherwise misled.

PROMOTION OF THE ENERGY EFFICIENCY

There is a growing need to improve the Energy Efficiency with various actions.

The Italian EE Decrees could be a very good instrument for increasing the Energy Efficiency.

It comes out that there are 2 important actors to promote E.E.:

- the **Energy Manager (EM)**,
the professional who in various ways operates
for the best management of the energy use;
he can promote and manage EE projects;
he could also, if properly certified, validate the projects for EEC;
- the **Energy Service Company (ESCO)**,
the company who provides services to implement
energy efficiency projects for their user-customers.

THE ENERGY MANAGER

The EM is an expert **professional**
with the **knowledge** and **experience** needed
to manage in an **efficient** way
the **use of energy**.

The EM works mainly for large energy users
or other energy efficiency related actors.

He can promote and manage energy saving measures and projects.

He could also, if properly accredited, validate the EE projects.

THE ENERGY MANAGER IN ITALY

The Italian Law n.° 10/1991 requires that all the **users** of more than 1000 Toe/y appoint an **Energy Manager**, and communicate his name to the Ministry (via FIRE) every year.

The EM may be:

- an **inside** employee of the company,
- or from **outside**:
 - a professional consultant
 - an ESCO

THE ENERGY MANAGER IN ITALY

The Energy Manager, according to the Law, must do:

- **Energy accounting:**
 - specifying end uses,
 - with the associated costs
- **Promote & Diffuse Energy Savings awareness.**
- **Devise & Implement Energy Conservation Measures.**
- **Report & make known the results obtained.**

THE ENERGY MANAGER IN ITALY

EM professional **profile** requested by law:

- engineering degree
- pluri-annual experience in his sector
- thorough updated knowledge of E.E. technologies
- feasibility study & preliminary design capability
- good knowledge of energy and investment costs evaluation

THE EM IN ITALY- FIRE

- **FIRE** - Federazione Italiana per l'uso Razionale dell'Energia is the Italian EM Association since 1988
- Its founder members are:
 - ENEA (National Energy Agency)
 - AIGE & EMC (former industrial EM Associations since early 80's)

THE EM IN ITALY - FIRE

- **FIRE** has 3 natures:

- **cultural:** to improve & diffuse EE knowledge and awareness
- **professional:** to promote & support EM's
- **institutional:** by an Agreement with the Ministry to:
 - collect & register EM nominations,
 - maintain the EM database & publish yearly the EM list,
 - sensitize who should appoint EM,
 - supply information and training support to EM.

THE EM IN ITALY - FIRE

FIRE supports EM through:

- **website** (www.fire-italia.it)
- “**Gestione Energia**” magazine: 5000 copies, 4 issues a year
- **Conferences** (twice a year) on specific subjects of interest
- 40 h training **Courses**
- 1 day **Seminars** on specific subjects
- **Forum** with specific discussion areas on website

THE ENERGY MANAGER - ROLE

The EMs can work for:

- **Users**, mainly large energy consumers especially Public Administrations.
- **ESCOs**
- **Utilities**: to devise & implement DSM actions
- **Local Energy Agencies**
- **Government Agencies & Local Authorities**:
 - to develop appropriate programmes & plans,
 - to implement control & verifications actions.

Good opportunities also to operate as independent **consultants** both:

- as single professional
- and in a consulting company

The EC Building Directive 2002/91/EC

“Independent Experts”

The new Directive issued the 16.12.02 on **Energy Performance of Buildings** requires the Member States to define before the end of 2005:

- minimum energy performance requirements;
- building energy performance **certificates**;
- regular inspections of boilers and air conditioning system;
- recommendations on possible improvements;
- independent accredited experts
operating as “sole traders” or employed by enterprises
to carry out certifications, inspections and write recommendations.

ENERGY MANAGERS - PROBLEMS

In Italy: **more than 2000** EM nominated in the Database,
but, in spite of good examples of excellence,
• many EM nominated **just to satisfy the law**,
with no real role, no objectives, no budget,
• in some cases **unsufficient quality** level.

In general: the EM role is fast changing
because of the market liberalisation process, where:

- **Users:** - have difficulties in choosing the best
supplier among many
- need a very accurate energy use forecast;
- **other Actors** need an EM like:
 - ESCO's
 - Utilities
 - Energy Agencies et al.

THE ENERGY MANAGER - WHAT TO DO

- Increase the awareness of the **importance of the EM** role among the interested actors, understanding the significant contribution they can give.
- Better common **definition** of roles & capabilities required.
- Improve EM number and quality level by adequate **training**.
(also developing training instruments on-line)
- Establish National & European **Associations**.
- Define & implement an appropriate EM **certification** procedure.
- This would also comply with the European Directive on Energy Performance of Buildings requiring independent **accredited experts** for certifications and inspections.

ESCO - DEFINITION

An ESCO - Energy Service Company is:

- a company providing **integrated services** to their customers (mainly large energy users, but also utilities et al.),
- implementing **energy saving projects**,
- providing performance and savings **guarantee**,
- being **paid** on performances by savings,
- possibly **financing** the project recovering the investment cost from the resulting savings

See “ESCO characteristics form”

ESCO Characteristics		
Name of the ESCO:		
Internet address:	http://....	
Contact Person	First Name:	
	Last Name:	
Address:		
Tel.:	Fax:	E-mail:
Profile:		
Criteria for passing a contract with a company	Minimum company energy bill (Euro):	
	Max. contract duration:	
Service Functions	Tick the box if it applies	Add Comments
Project Identification and Appraisal		
Project Technical Design		
Project Implementation		
Project Financing (or Third Party Financing)		
Guarantee of Performances		
Operation Service		
Purchase of the Fuel/electricity		
Insurance Coverage		
Societal Characteristic of ESCO	Tick the Box if it applies	Add Comments
Independent Specialist Company		
An equipment supplier		
An energy utility or supply company		
A public sector energy agency		
A public-private joint venture		
Other		

WHAT ESCOs DO

- energy audit - definition of possible improving actions
- project design and specifications
- code compliance verification and guarantee
- procurement and installation of equipment
- project management and commissioning
- operation & maintenance for the contract period
- purchase fuel & electricity (to provide heat, comfort, light, etc.)
- monitor, measure & verify results
- guarantee the results by proper contract clauses (EPC)
- project financing, or TPF, if needed

May do: - all the above actions
- directly

- or only some
- or partially subcontracted
under their own responsibility

Capabilities required to qualify as an ESCO

- **engineering:**

- energy auditing & monitoring
- feasibility studies & techno-economic analysis
- preliminary & detail design with technical specifications
- code compliance
- measurements, monitoring & verifying

- **economic & financial:**

- very good knowledge of energy prices & equipment costs
- investment and running costs and incomes analysis

- **contractual, legal, administrative:**

- to propose, negotiate and define appropriate contracts with customers, suppliers and subcontractors

Capabilities required to qualify as an ESCO

- **construction and installation** including:
 - project management
 - commissioning
- **operation & maintenance** including:
 - procure & provide fuel & electricity
 - energy management
 - code compliance: - environment - safety
- **financing** capability
- **risks assessment & coverage**

THE ESCOs IN EUROPE

The **European Commission** has since long promoted **ESCOs & TPF**.

- **1988: E.C. Recommendation to Member States**
to promote ESCOs and the use of TPF,
defining it and describing how they operate.
- **1992: SAVE Directive, art, 4:**
Member State shall draw up and implement
programmes to use TPF in the public sector.
- Many **THERMIE & SAVE** projects to study and promote ESCO, TPF & EPC.
- **GreenLight** programme: started 1.1.2000;
has identified a number of ESCOs operating in the lighting field,
has a preliminary list of ESCOs, and an ESCO Characteristics form
in his website (www.eu-greenlight.org)

The ESCOs in Italy

- First ESCOs started in Italy in the **early 80's** with the “heat service”, to implement technology improvements with TPF (quite a few CHP plants in Hospitals)
- **AGESI** (formerly ASSOCALOR) is their Association
- On the GreenLight website are listed more than **20 Italian ESCOs**, who joined as GL Endorsers to support the programme having filled the E.C. “ESCO Form”
- The recent E.E. Decrees (24.04.01) introduce tradable **Energy Efficiency Certificates** that can be issued to Distributors (Utilities) and **ESCOs** against E.E. projects, that can contribute to energy reductions, mandatory for Distributors.

THE ESCO - PROBLEMS

- It is not clear how many of the listed ESCOs are really active and which are their performances and quality levels.
- The Italian E.E. **Decrees** give **NO definition** and requisites **of the ESCOs** that can get the E.E. Certificates, so originating vagueness and uncertainty in applications
- There is a need for an accurate common **definition** of the ESCO role, characteristics and requisites, preferably from an official source and Europe-wide.
- Actual ESCO impact and contribution to Energy Efficiency in Europe still **lower than needed** and expected!

THE ESCO -WHAT TO DO

- clearly **define** ESCO characteristics, requisites & roles
- **help them grow** in number, capabilities & quality
(giving financial & insurance support)
- establish National & European Trade **Associations**
- define a **Code of Ethics** for ESCO
- define & implement appropriate **Certification** procedure
to produce a list of qualified ESCOs EU wide

Energy Managers and ESCOs

- ESCO need the professional capabilities of EM both as an employee and/or as a consultant.
- EM working for large energy Users, especially P.A., may need an ESCO to contract the implementation of its energy saving projects.
- EM and ESCO have same knowledges and language, they are the natural negotiators for their common agreement, and will consequently work together on the same project.
- Both need:- qualification (with similar procedure)
 - supporting Associations
- In Italy an ESCO can perform the EM role requested by Law

CONCLUSIONS

- ESCOs and EM have an important role to promote & realize Energy Efficiency Projects in commercial buildings!
- ESCO are based on professional EM and co-operate with EM
- Appoint an EM, defining his: - role & functions in the Company
- objectives - budget
- Large companies & corporation may have their internal engineering and Energy Management services or dept.
- SME may outsource Energy Management to ESCO,
with appropriate contracts well defining: - performances required and
- expected results
- Establish National & European Associations
- Define & implement appropriate Qualification procedure

The EMESCO Network of Excellence

- The E.C. DG RTD has introduced in his FP6 the new instruments of “Integrated Project” and “Network of Excellence”.
 - It has also called for an “Expression of Interest” for these instruments in the “Priority areas” which include Energy saving.
 - FIRE, on the basis of what above said, has proposed an EoI on: **“Energy Saving promotion through EM & ESCO networks”** (EMESCO) which has by now collected the interest of 10 Italian and more than 25 European organisations.
 - The proposed actions are in principle those previously said.
 - The EoI was intended to be used by the E.C. for a better definition of the next “Call for Proposal” (see www.cordis.lu/fp6/eoi-instruments)
- However the FP6 Call for Proposal issued last November does not include the proposed subject; but it is expected that the next DGTREN Call for Proposal will be more suited and give more chances.

RECENT EVENTS IN ITALY on ESCO

Two interesting events on ESCO have recently come out in Italy.

- **CONSIP** Spa is a Government organisation entrusted for centralised purchasing of products and services for the Public Administration.

It has developed an on-line procedure which allows all the decentralised administrations to buy, according their needs, office equipment, fuel, electricity, etc.

It has quite recently also defined a central contract for supplying “**energy service**”, i.e. Operation&Maintenance for **heat** supply and technological improvement, on the basis of a predefined price in € /m³.dd.h.

For more information see: www.acquisti.tesoro.it

- **Regione Toscana** has defined a **Voluntary Agreement** to promote the EE through the **ESCOs** and Third Party Financing.

The **ESCO** having **well defined minimum requisites** may sign the Agreement and be included in an official regional list of qualified ESCO.

Thank you for your attention

Announcement from EC DGJRC follows

The European Commission DG JRC, as part of its activities to promote the ESCOs industry in the European Union (EU), is organising an international conference on the status, prospects and challenges that the Energy Service Industry is facing today in Europe, following the recent electricity and gas market liberalisation and the international commitments deriving from the Kyoto Protocol.

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The European Commission under the GreenLight and Motor Challenge programmes has established a first list of ESCOs companies operating in the EU, together with an ESCO characterization form and it has successfully contributed to the ESCO promotion in the European Union



**First European Conference on
Energy Service Companies
(ESCOs):
“Creating the Market for the
ESCOs’ Industry in Europe”**

**Milan (Italy)
22-23 May 2003**

Organized by

EUROPEAN COMMISSION

JOINT RESEARCH CENTRE

Institute for the Environment and Sustainability

In collaboration with:

FIRE

IPMVP Inc.

**Autorita'di Regolazione per l'Energia Elettrica e
il Gas**

INTEL s.r.l.



The main conference goals are:

Presenting and defining the role of ESCOs in the European liberalised energy market and environmental policy framework;

Presenting some successful examples of energy efficiency projects carried out by ESCOs;

Presenting the Performance Contracting concept and new ESCO contract developments;

Identifying the EU strategy to further develop and establish an ESCO business and market;

Presenting some well established monitoring and verification procedures (in particular IPMVP) to enable the ESCO industry to operate;