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CENTRE FOR RENEWABLE
ENERGY SOURCES AND SAVING

ENERGY SAVING 2020

10th International Conference for European Energy Managers

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Virtual Event

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Energy Savings Importance

Energy savings and energy efficiency are key factors in

- Reducing energy costs for final consumers;
- Securing energy supply;
- Improving the competitiveness and sustainability of national economies;
- Creating jobs; and
- Reducing gaseous emissions and the intensity of climate change.



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Intelligent Energy Europe

- ✓ Decoupling energy use and economic growth.

Driving force at the core of the Energy strategy of the European Union

- ✓ Energy Efficiency Directive [2012/27/EU](#)
- ✓ Energy Performance of Buildings Directive [2010/31/EU](#) (EPBD)

as amended as part of the [Clean energy for all Europeans package](#), in 2018 and 2019. The Directive amending the Energy Performance of Buildings Directive ([2018/844/EU](#)) introduces new elements and sends a strong political signal on the EU's commitment to modernise the buildings sector in light of technological improvements and increase building renovations.



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Intelligent Energy Europe

Set of policies and measures covering the whole energy chain:

- Energy production, transmission and distribution;
- The public sector leadership in EE;
- Buildings and appliances; and
- Industry



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Intelligent Energy Europe

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Need:
End consumers gain the power to
manage their energy consumption.



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Energy Transition in Greece

The government has given a clear signal for a green transformation in the country's energy system.

The implementation of this transformation includes, differentiation in the energy mixture, reduction of lignite and shift to clean energy and will be achieved in 6 + 1 steps

(ref: Ministry of Energy, Environment and Mineral resources).



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Energy Transition in Greece

Renewable Energy Sources (2nd step)

RES' penetration (by 2030) 35% in the gross final energy consumption; and
61-64% of the electricity consumption.

RES and Energy Savings key issues:

- ✓ Energy storage
- ✓ Small wind turbines
- ✓ Energy sustainable communities (RES, smart grids)
- ✓ Hydrogen (energy storage, transportation fuel).



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Innovations Landscape for a Renewable-powered Future

Enabling Technologies

1. Utility-scale batteries
2. Behind-the-meter batteries
3. Electric-vehicle smart charging
4. Renewable power-to-heat
5. Renewable power-to-hydrogen
6. Internet of Things
7. Artificial Intelligence and Big Data
8. Blockchain
9. Renewable mini-grids
10. Supergrids
11. Flexibility in conventional power plants

Business Models

12. Aggregators
13. Peer-to-peer electricity trading
14. Energy-as-a-service
15. Community-ownerships models
16. Pay-as-you-go models



Market Design

17. Increasing time granularity in electricity markets
18. Increasing space granularity in electricity markets
19. Innovative ancillary services
20. Re-designing capacity markets
21. Regional markets
22. Time-of-use tariffs
23. Market integration of distributed energy resources
24. New billing schemes

System Operation

25. Future role of DSOs
26. Co-operation between TSOs and DSOs
27. Advanced forecasting of variable renewable power generation
28. Innovative operation of pumped hydropower storage
29. Virtual power lines
30. Dynamic line rating

Energy Transition in Greece

Energy Saving (4th step)

- Public buildings sector renovation (Electra funding programme by EIB)
- Private homes renovation, under the programme "Energy Saving & Autonomy", providing government subsidies.
- Supporting growth Energy Services Companies (ESCOs)



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EUREM Energy Managers

The Energy Manager should be active in all phases of the energy savings /efficiency projects:

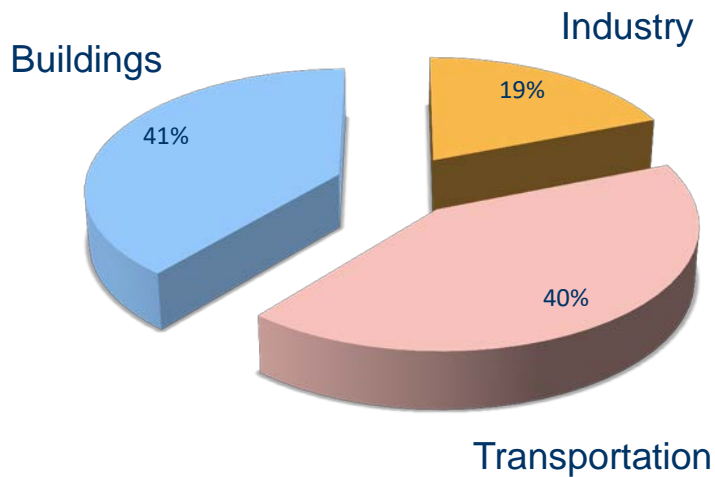
1. Funding (EC, EIB, EBRD, national governments)
2. Design (ESCOs, engineers)
3. Implementation
4. Auditing
5. Evaluate Impact in business, market, environment, climate change
6. Influence consumers, policy makers, marketeers



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EUREM Energy Managers ecosystem



Stakeholders

Energy Managers	Property Owners	Energy Auditors
ESCOs	Government/Prefectures	Industry
Banks	Material Suppliers	Consulting Firms
Environmental groups	Policy Makers	EPC companies



Center for Renewable Energy Sources & Savings Activities

1. Energy saving and management calculations tools
2. Integration of PV and small wind turbines in buildings
3. Smart grids for energy sustainable communities (Digitalisation)
4. Advanced heat pumps for heating and cooling
5. Energy Communities

6. Use of biomass for electricity generation and heating/cooling
7. IoT for appliances and smart homes
8. Green fuels for transportation
9. Energy savings in infrastructures (harbors, airports, industrial zones)
10. Smart financing for energy savings projects



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Thank you for your attention!

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