



Policy Conference
**Energy Transition Governance for
Better Energy Security in Europe**

Regional Financial Institutions for Energy Efficiency

Ludwig Karg, INEM / B.A.U.M.

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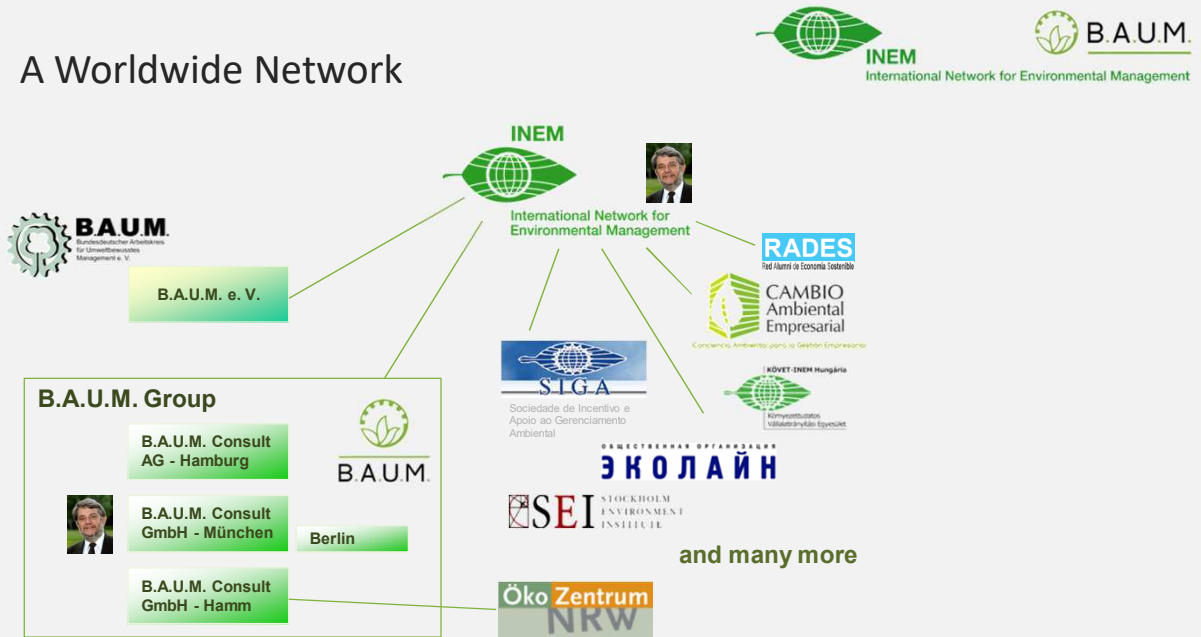
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A Worldwide Network



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B.A.U.M. - facilitator for a smart future

Action Field	Services/Projects
Research and Governance Projects	Smart Grids, electric mobility, renewable energies (consulting, communication, project management)
Consulting for regional and local authorities	Implementing climate protection concepts, creating master plans for city development, facilitating regional and city development processes
Consulting for enterprises	Implementing energy efficiency programs, supporting certification processes, technology networking



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A new era of energies

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era of fire



era of power



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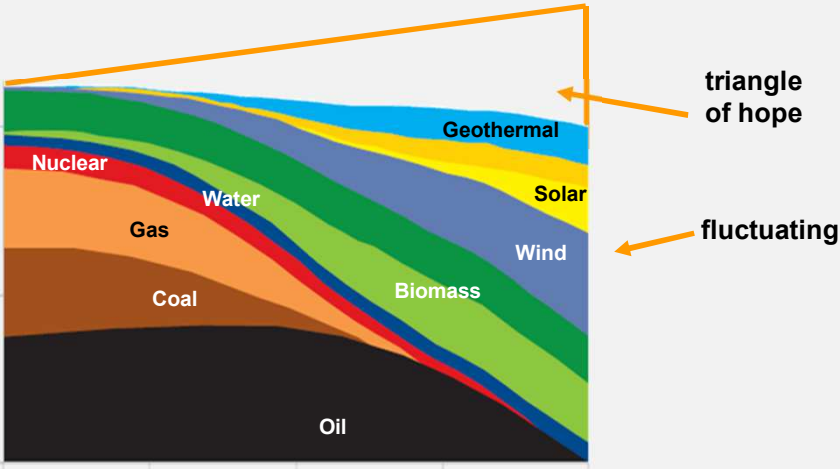
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Will it work?

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triangle of hope

fluctuating

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Consumers are different

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Using renewable energies...

Saving energy ...

Able to pay the energy bill ...

10% in EU

Being rewarded for my flexibility ...

Switching retailer on the internet ...

Generating energy at home ...

don't care ...

too many!

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What Customers want ...

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kWh

kW

m³

°C

lm

km

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S3C

SMART **C**ONSUMER
 SMART **C**USTOMER
 SMART **C**ITIZEN

www.s3c-project.eu

www.smartgrid-engagement-toolkit.eu








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Support energy utilities to effectively cooperate with ...



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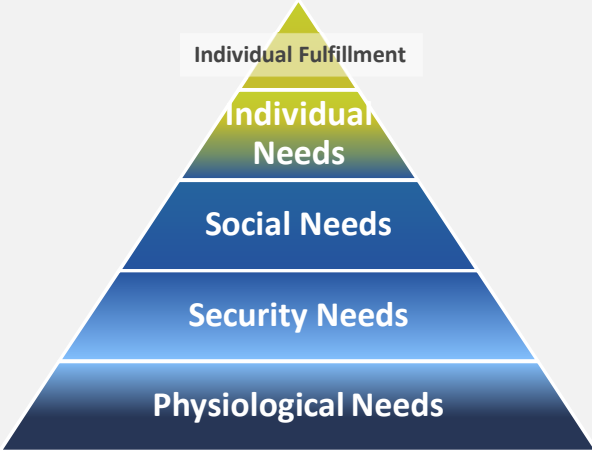
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Levels of Personal Needs

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Creativity, transcendence

Success, spontaneity

Closeness, love, mobility

Housing, work, security

Air, food, water, light, warmth


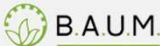
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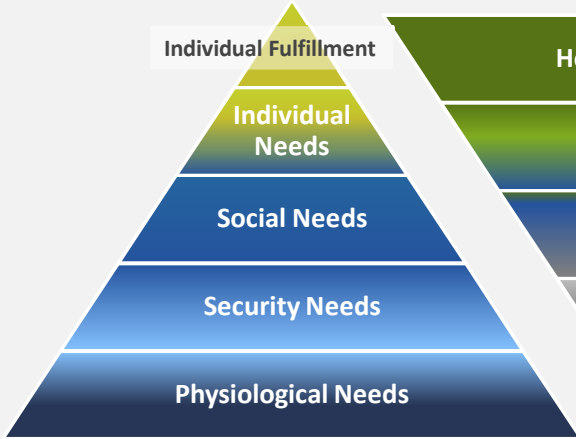
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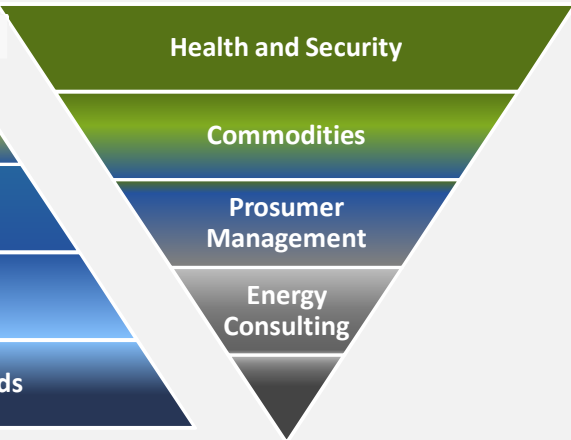
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Developing People-Centred Products

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Walls ...

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.. are falling

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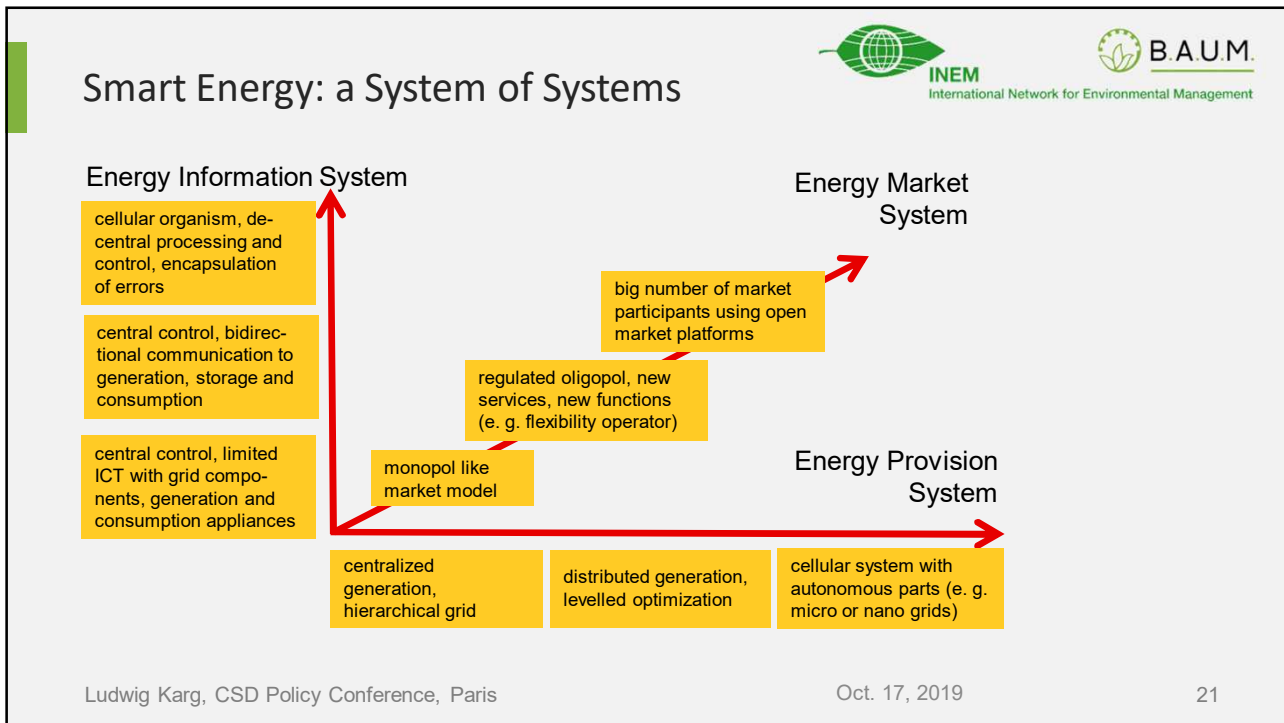
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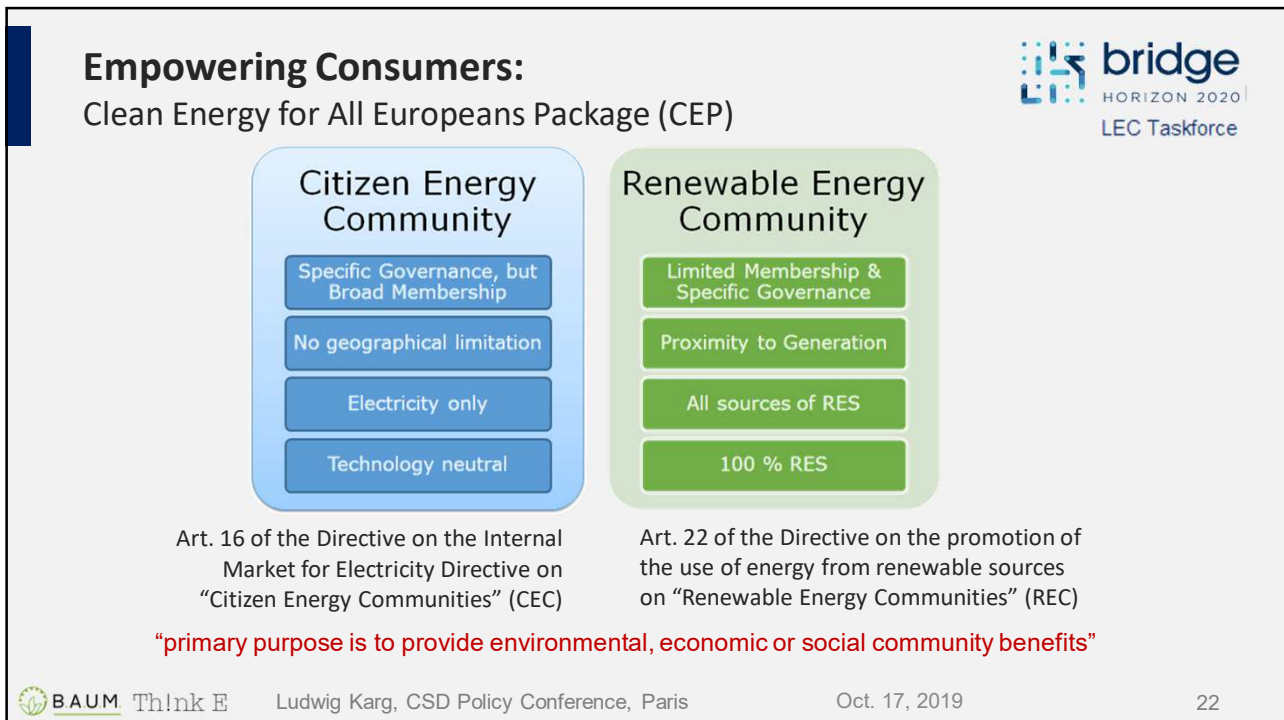
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The definition in the EC directives

A Citizen Energy Community is a legal entity

which is based on voluntary and open participation, effectively controlled by shareholders or members who are natural persons, local authorities, including municipalities, or small enterprises and microenterprises.

The primary purpose is to provide environmental, economic or social community benefits for its members or the local areas where it operates rather than financial profits. A citizens energy community can be engaged in electricity generation, distribution and supply, consumption, aggregation, storage or energy efficiency services, generation of renewable electricity, charging services for electric vehicles or provide other energy services to its shareholders or members.

A Renewable Energy Community is a legal entity

(a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity;

(b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities;

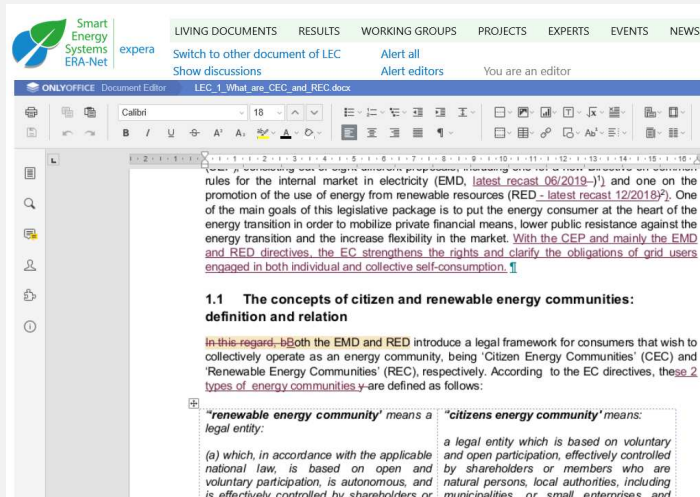
(c) the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits;

The taskforce

Set up in the framework of BRIDGE to create synergy

- **What happens in the different MSs?**
 - Good and inspiring examples
 - Analysis on legal existing and upcoming framework
- **Broad EU wide approach**
 - Holistic: international and national, academia and practitioners, ...
 - Inclusive: broad approach starting from bottom up
- **Recommendations expected**
 - Replicability and upscaling needs and potentials
 - research and demonstration needs

Participating!



Smart Energy Systems ERA-Net expira

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rules for the internal market in electricity (EMD, latest recast 06/2019–!) and one on the promotion of the use of energy from renewable resources (RED - latest recast 12/2018²). One of the main goals of this legislative package is to put the energy consumer at the heart of the energy transition in order to mobilize private financial means, lower public resistance against the energy transition and the increase flexibility in the market. With the CEP and mainly the EMD and RED directives, the EC strengthens the rights and clarify the obligations of grid users engaged in both individual and collective self-consumption. ¹

1.1 The concepts of citizen and renewable energy communities: definition and relation

In this regard, both the EMD and RED introduce a legal framework for consumers that wish to collectively operate as an energy community, being 'Citizen Energy Communities' (CEC) and 'Renewable Energy Communities' (REC), respectively. According to the EC directives, these 2 types of energy communities are defined as follows:

"renewable energy community" means a legal entity:	"citizens energy community" means:
(a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or	a legal entity which is based on voluntary and open participation, effectively controlled by shareholders or members who are natural persons, local authorities, including municipalities, or small enterprises and


- register as an expert at www.smartgridsplus.eu
- read and comment Living Documents
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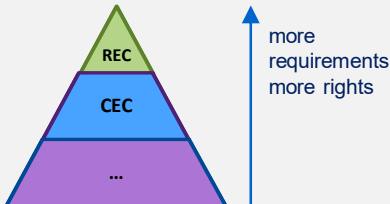
Finding the good examples: LD #11

- Editor
- Class
- Energy sector
- Purpose and concept
- Geographical scope
- Renewable energies
- Maturity
- Organizational structure
- Participants and actors
- Roles and responsibilities
- Activities and measures
- Relation to others
- Information system
- Legal framework
- Supporting framework
- Barriers
- Relevance (for REC/CEC)

country	currently described example(s) (status 24.09.19)
Belgium	- MéryGrid - Ecloudcompany - BocagEn CVBA - Co-housing cooperative De Okelaar - E-Cloud - EcoPower CVBA
Netherlands	- Schoonschip
Germany	- EWS Elektrizitätswerke Schönau e.G. - Elektrizitätswerke Hindelang e.G. (EWH) - Isarwatt e.G.
Austria	- Heimschuh
Greece	- "Agrinio Association" and "Anemoessa Akarnania" - Kozani energy community - TILOS - Energy Community of Thessaloniki – Central Macedonia
France	- Bordeaux Gironde Habitat - Malaunay - Alès Logis Cevenols
Slovenia	- Energy Community in Luce (COMPILE project)
Croatia	- Technology park in Kricevci, Croatia (demo of the COMPILE project)
Cyprus	- University of Cyprus campus
Denmark	- Svalin Bofællesskab (Living Community)
Portugal	- SENSIBLE-Valverde
Slovenia	- Energy Community in Luce (COMPILE project)

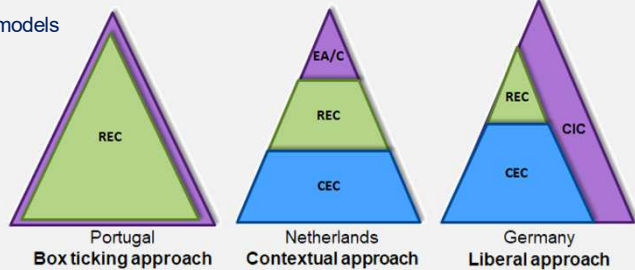
Many flavours in relation to CEC and REC





more requirements,
more rights

basic models

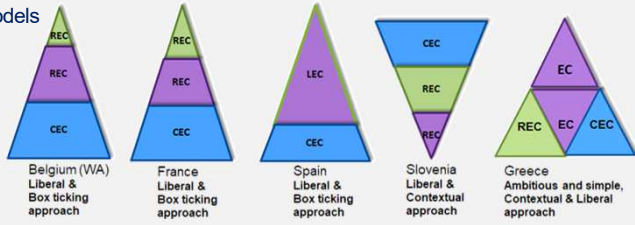


Portugal
Box ticking approach

Netherlands
Contextual approach

Germany
Liberal approach

hybrid models



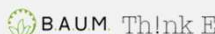
Belgium (WA)
Liberal & Box ticking approach

France
Liberal & Box ticking approach

Spain
Liberal & Box ticking approach

Slovenia
Liberal & Contextual approach

Greece
Ambitious and simple, Contextual & Liberal approach




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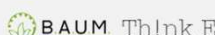
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The topics (identified by core-team of taskforce)



1. What are Energy Communities?
2. Which potential for renewable energy use can be triggered by a CEC or REC in addition to existing organisations?
3. What would be benefits and options for a CEC to operate its own (sub) grid?
4. What are benefits of CEC or REC in relation to existing means and measures of citizen involvement?
5. Which overall cost savings can be expected from CECs compared to existing schemes?
6. What are feasible tariffs to allow for the implementation of a CEC as part of the overall energy system?
7. How can candidates be supported to establish a CEC or REC?
8. What are requirements to ICT solutions for the implementation of a CEC or REC?
9. How can data collection and management be limited and data security be ensured in a CEC or REC?
10. What is the existing national situation of Energy Communities in the context of the Clean Energy Package?



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Recommendations

- Do not limit your support to CECs & RECs
 - You would exclude a lot of relevant and successful initiatives
 - You would force unnecessary opposition
- Link CEC & REC framework to existing legislation, regulation and support
 - creates confidence in the new opportunities
 - open migration paths
- Be ambitious!
 - new energy market models meeting many expectations of stakeholders
 - entry doors for advanced longterm development towards carbon reduced society

preliminary

Classes of Energy Communities

No	Name	LEC Taskforce
class 1	Collective generation and trading of electricity	all types of territorial or commercial groupings of generators – whether active on the market or under feed-in mechanisms (often called Virtual Power Plants)
class 2	Generation-Consumption Communities	certified sourcing of electricity in a closed group of generators and consumers - not necessarily in proximity but including local or regional energy markets
class 3	Collective residential & industrial self-consumption	generation, storage and consumption in residential cases with multiple dwellings; includes Tenant-Power (Mieterstrom) - models
class 4	Energy positive districts	districts with residential and business entities operating their energy supply systems under their own regime
class 5	Energy islands	real islands or parts of the distribution system that can be operated standalone (e.g. cellular system as in SINTEG, holonic model as in PolyEnergyNet)
class 6	Municipal utilities	existing organizations for energy production, supply and grid operation under citizens' control – directly (e.g. cooperative) or indirectly (e.g. controlled by local government)
class 7	Financial aggregation and investment	a “community” of investors joins to scale the amount of or manage the investment in generation systems (without further involvement in organisation etc.)
class 8	Cooperative Financing of Energy Efficiency	citizens jointly investing in efficiency means of SMEs and municipalities, possibly in their own region
class 9	Collective service providers	all types of commercial groupings of energy services (e.g. grouping of EV charging stations, aggregation of demand side management services)
Class 10	Digital supply and demand response systems	all types of digitally controlled energy systems (e.g. implemented with blockchain), these days possibly operated as a sandbox-model

7. How can candidates be supported to establish a CEC or REC? Assessment tool

- potential support needs:**
 - clear legal framework
 - financial support for setup
 - financial support for operating
 - capacity building for key actors
 - capacity in terms of time
 - counselling with models / templates
 - network for knowledge exchange
 - umbrella to reduce risks, costs etc.
 - electrical technology
 - software for operating the community
 - clear positioning of DSO / TSO
- scale for assessment:**
 - 5= proven and well known** model, many solutions and good offerings available
 - 4= good solutions and offerings available**, mainly needs information about them
 - 3= various models and solutions available**, but need to be adapted and made better accessible
 - 2= models and solutions in few countries or development projects, needs replication support**
 - 1= widely unknown** and no support available
 - 0= not needed**

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No	Name	clear legal framework	financial support for setup	financial support for operating	capacity building for key actors	capacity in terms of time	counselling with models / templates	network for knowledge exchange	umbrella to reduce risks, costs etc.	electrical technology	software for operating the community	clear positioning of DSO / TSO
class 1	Collective generation and trading of electricity	1	1	1	1	1	1	1	1	1	1	1
class 2	Generation-Consumption Communities	1	1	1	1	1	1	1	1	1	1	1
class 3	Collective residential self-consumption	1	1	1	1	1	1	1	1	1	1	1
class 4	Energy positive districts	1	1	1	1	1	1	1	1	1	1	1
class 5	Energy islands	1	1	1	1	1	1	1	1	1	1	1
class 6	Municipal utilities ²	1	1	1	1	1	1	1	1	1	1	1
class 7	Financial aggregation and investment	1	1	1	1	1	1	1	1	1	1	1
class 8	Cooperative Financing of Energy Efficiency	1	1	1	1	1	1	1	1	1	1	1
class 9	Collective service providers	1	1	1	1	1	1	1	1	1	1	1
Class 10	Digital energy supply and demand response systems	1	1	1	1	1	1	1	1	1	1	1

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ALLIES

Activating and Learning from
Local Investments in Energy Savings

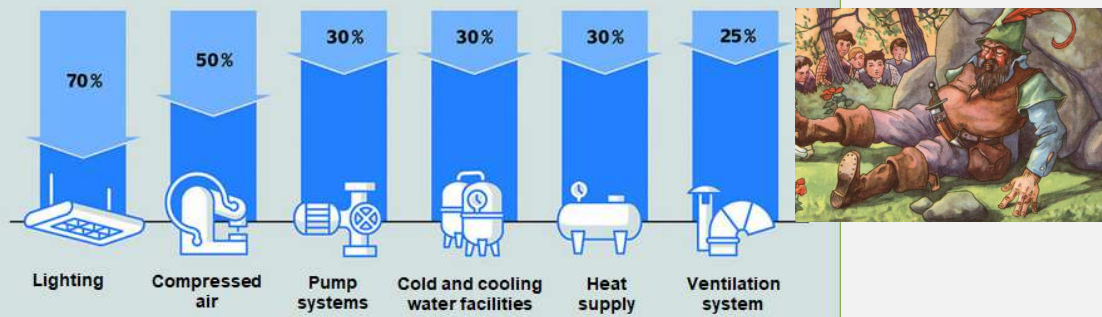


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Energy Efficiency: Potentials in Commerce and Industry



Amount of energy saved on average through efficient
cross-sectional technologies



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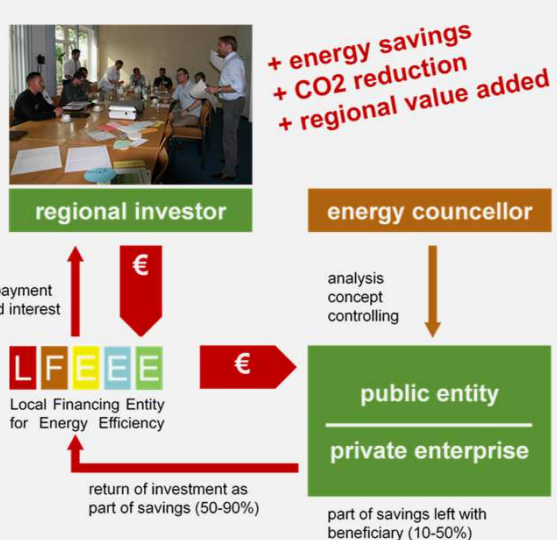





based on a decision of the German Bundestag

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ALLIES in a nutshell ...



+ energy savings
+ CO2 reduction
+ regional value added

regional investor → **energy councillor** → **public entity / private enterprise**

Local Financing Entity for Energy Efficiency (LFE²EE) → **return of investment as part of savings (50-90%)**

part of savings left with beneficiary (10-50%)

analysis concept controlling

repayment and interest

Supported by: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

European Climate Initiative EUKI

based on a decision of the German Bundestag

- learning from experience with Regional Energy Efficiency Cooperatives in Germany
- developing tools and guidelines
- establishing new LFE²EEs in Hungary, Poland and Germany

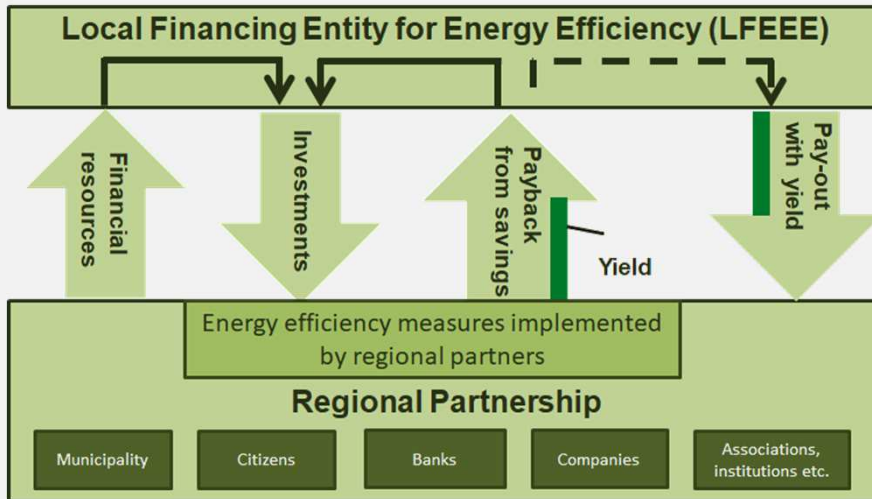
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The general idea



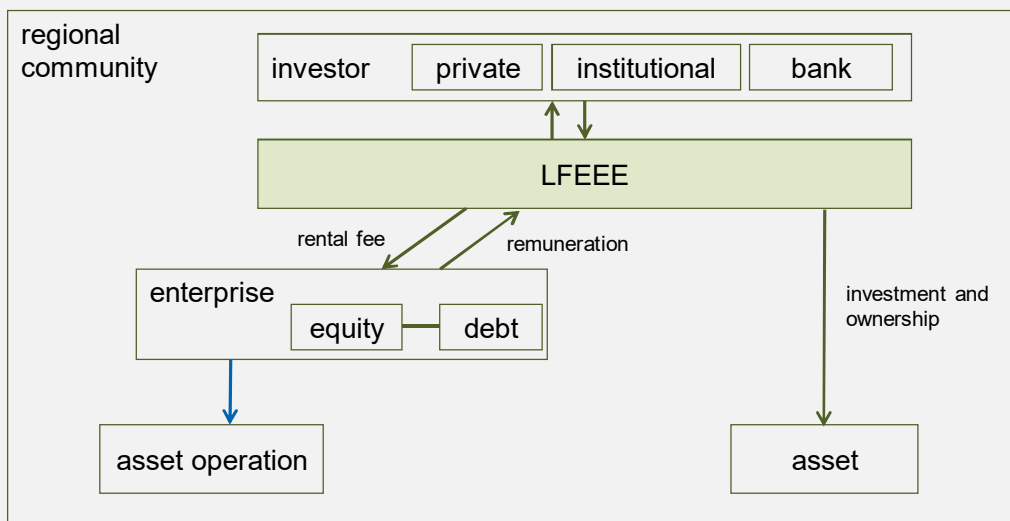
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The general idea



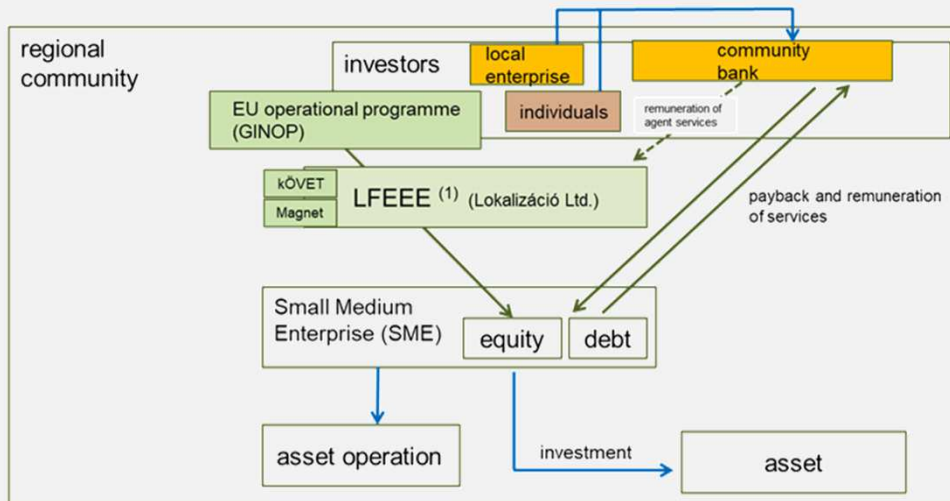
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The Hungarian LFEEE



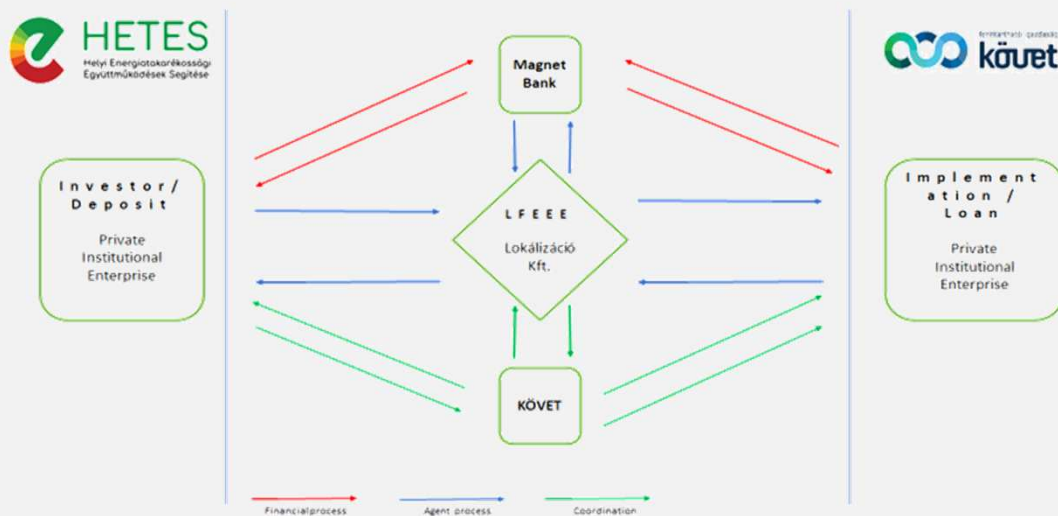
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The Hungarian LFEEE

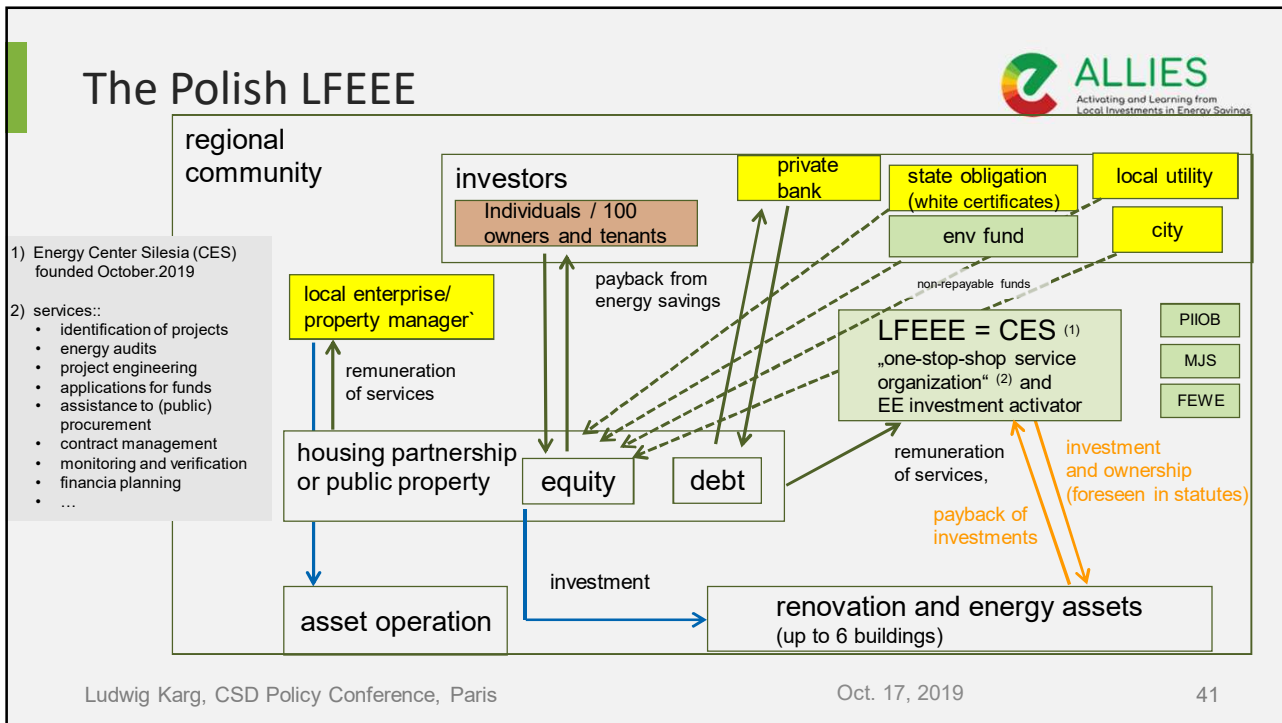


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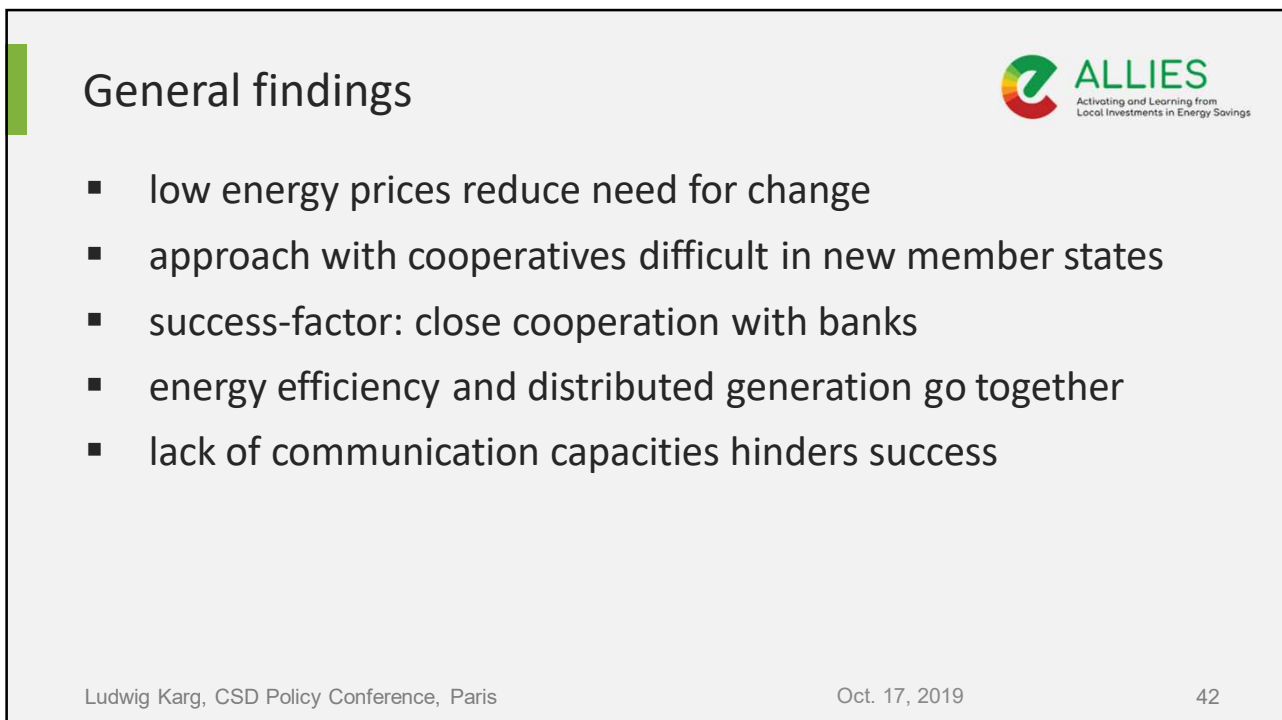
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General findings

- low energy prices reduce need for change
- approach with cooperatives difficult in new member states
- success-factor: close cooperation with banks
- energy efficiency and distributed generation go together
- lack of communication capacities hinders success

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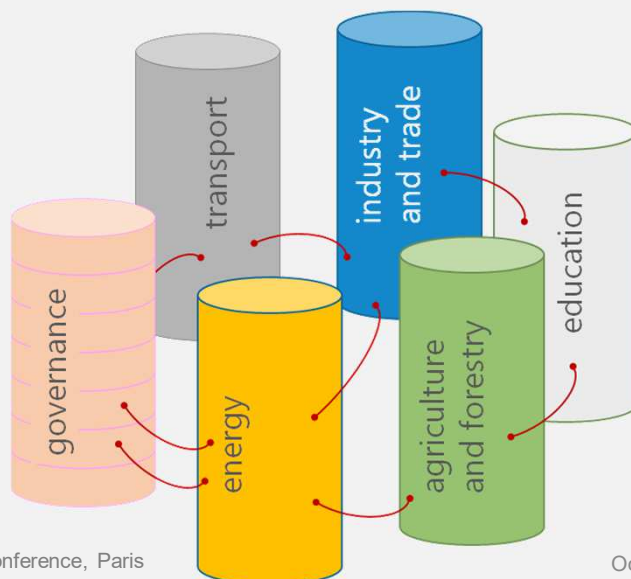


see you for the final conference
in Krk, Jan. 27-29, 2020

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The real problem: silo thinking and doing!



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TIME is running!

Technology	➡	Transformation
Insight	➡	Institution
Management	➡	Motivation
Economy	➡	Education