ERSE
ENTIDADE REGULADORA
DOS SERVIÇOS ENERGÉTICOS

Active Consumers and Energy Communities

Energy transition challenges

Jorge Esteves

Round Table:
Energy Communities Framework:
A National and European Vision

Energy Communities Framework: A Vision from Regulation

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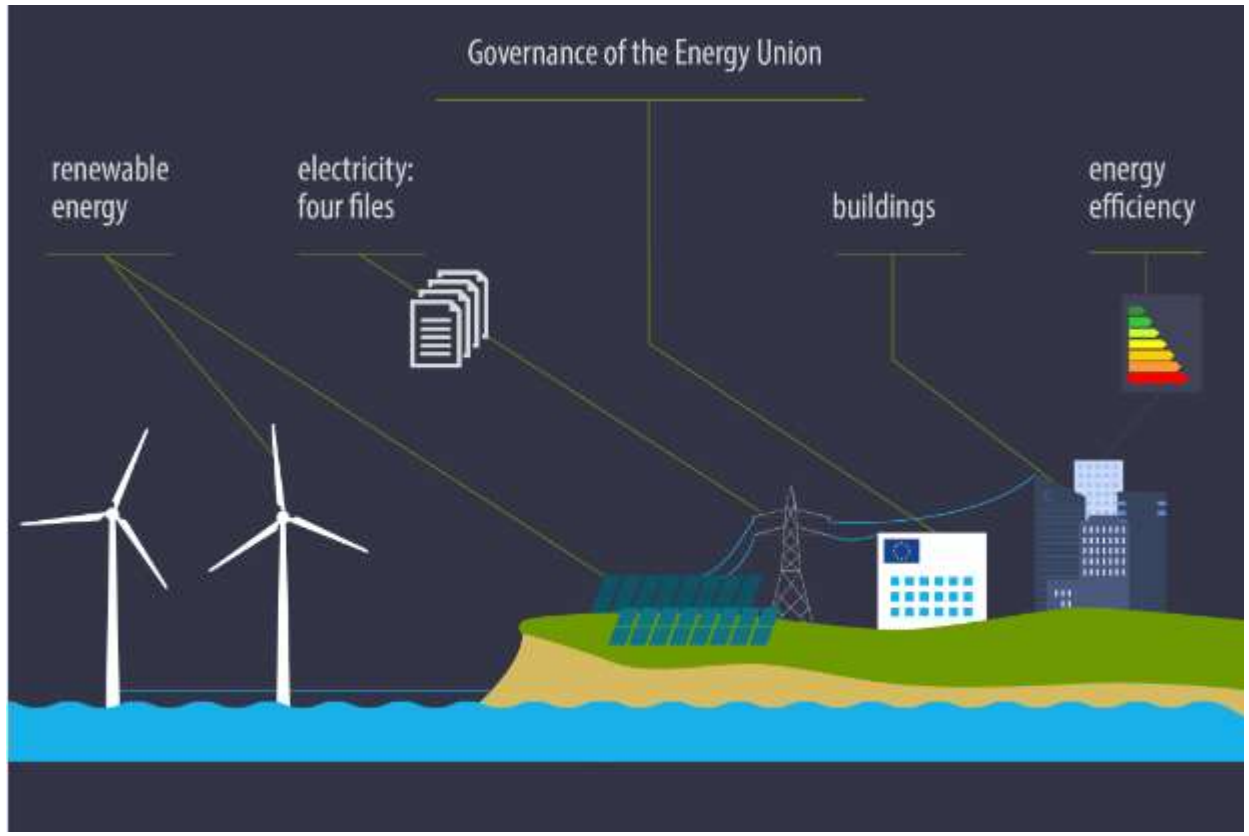
1. New concepts from the “Clean Energy for All Europeans” Package

2. Active consumers and Energy Communities

European Legislative Package
"Clean Energy for all the Europeans"

The publication of the 8 legislative documents constituting the European Legislative Package "Clean Energy for All Europeans" has been concluded last 14 June, after more than two years of preparation



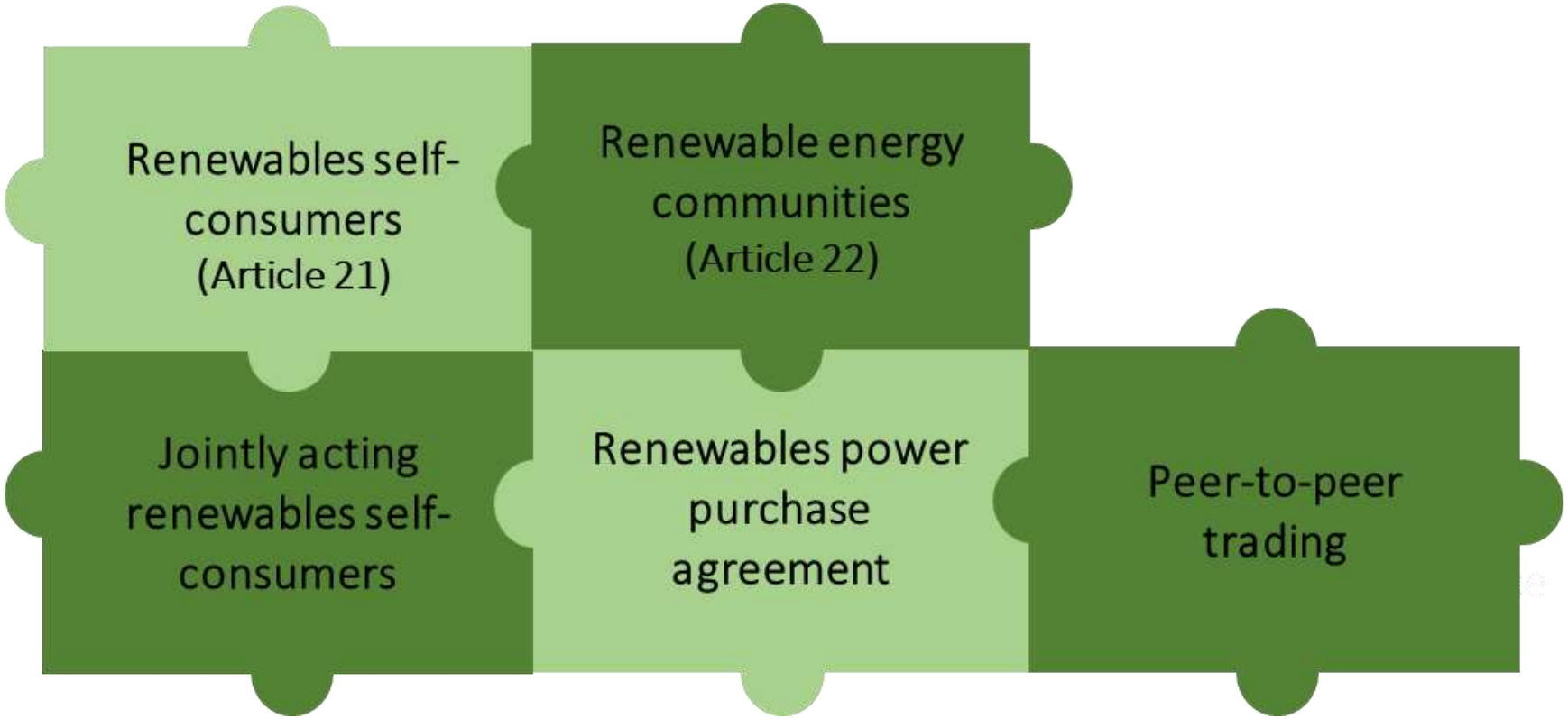
Source: https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans, Consulted at 25/06/2019

Clean energy for all Europeans package - legislative process

	European Commission Proposal	EU Inter-institutional Negotiations	European Parliament Adoption	Council Adoption	Official Journal Publication
Energy Performance in Buildings	30/11/2016	Political Agreement	17/04/2018	14/05/2018	19/06/2018 - Directive (EU) 2018/844
Renewable Energy	30/11/2016	Political Agreement	13/11/2018	04/12/2008	21/12/2018 - Directive (EU) 2018/2001
Energy Efficiency	30/11/2016	Political Agreement	13/11/2018	04/12/2018	21/12/2018 - Directive (EU) 2018/2002
Governance of the Energy Union	30/11/2016	Political Agreement	13/11/2018	04/12/2018	21/12/2018 - Regulation (EU) 2018/1999
Electricity Regulation	30/11/2016	Political Agreement	26/03/2019	22/05/2019	14/06/2019 - Regulation (EU) 2019/943
Electricity Directive	30/11/2016	Political Agreement	26/03/2019	22/05/2019	14/06/2019 - Directive (EU) 2019/944
Risk Preparedness	30/11/2016	Political Agreement	26/03/2019	22/05/2019	14/06/2019 - Regulation (EU) 2019/941
ACER	30/11/2016	Political Agreement	26/03/2019	22/05/2019	14/06/2019 - Regulation (EU) 2019/942

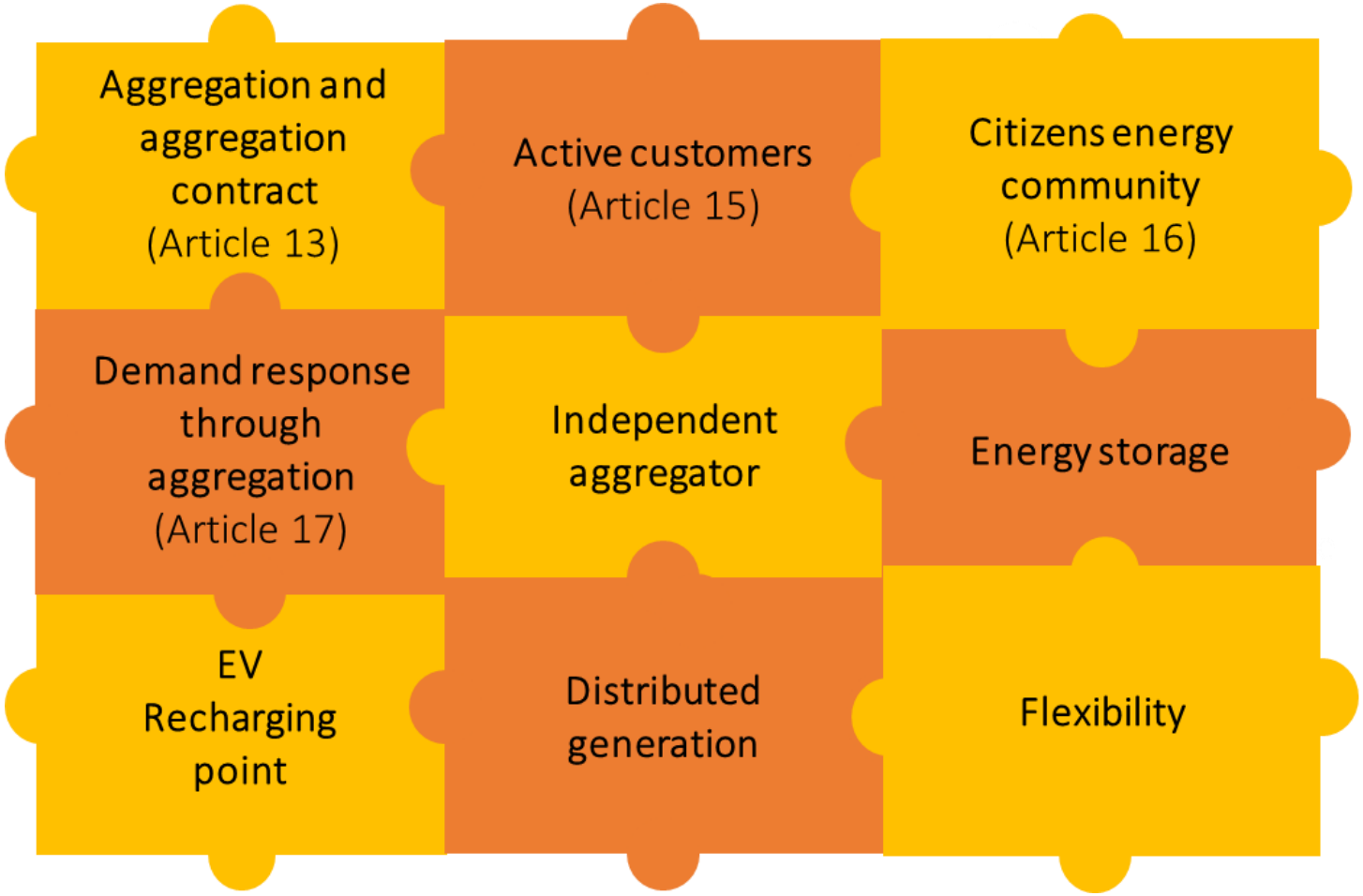
Some new (or recast) concepts

Directive (UE) 2018/2001 of the European Parliament and of the Council of 11 December 2018 **on the promotion of the use of energy from renewable sources** (recast of the Directive 2009/28/EC of the European Parliament and of the Council)



Some new (or recast) concepts

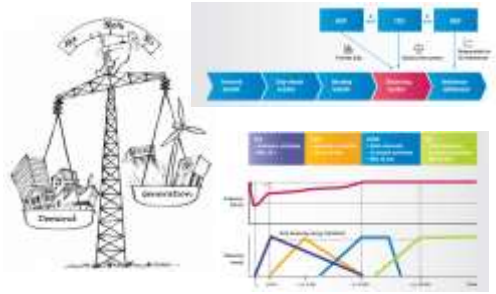
Directive (EU) 2019/994 of the European Parliament and of the Council of 5 June 2019 on common rules **for the internal market for electricity** and amending Directive 2012/27/EU (recast)



Regulatory Sandboxes (Pilot projects)

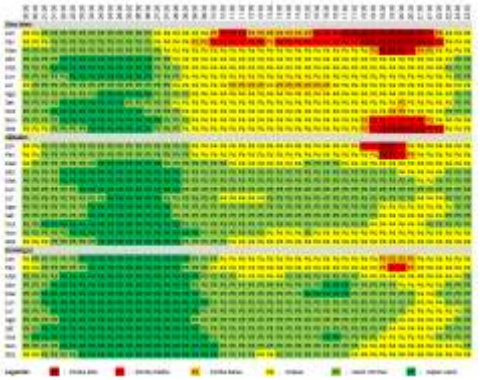
A way for allowing the development of all these new concepts

First applications of the Regulatory Pilot Projects concept:



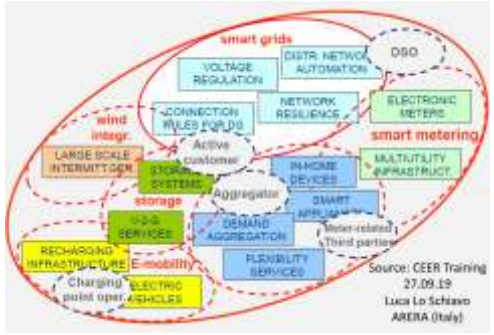
Pilot Project 2019 **"Participation of the Demand Response in the Portuguese Balancing Market"**

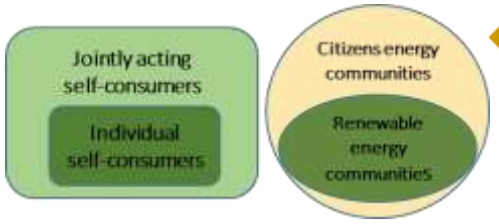
Pilot Project on "**Dynamic Tariffs**"



Pilot Projects at the **"Electric Mobility Regulation",** which is in final approval by ERSE

Pilot Projects at the **"Regulation on Services at Smart Electricity Distribution Networks"**





Perspective of Pilot Projects on **"Jointly acting renewables self-consumers" and "Energy communities"**

Energy Communities Framework: A Vision from Regulation

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1. New concepts from the “Clean Energy for All Europeans” Package

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What are Energy Communities?

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 (e.g. contracting / ESCO, crowd-funding
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

B.A.U.M. Think E LEC TF, Intermediate Report. Ludwig 26.09.2019 13

Source: Leen Peeters, Ludwig Karg; B.A.U.M / Think E "Taskforce Local Energy Communities - Intermediate Report"; presented at the CEER Training on Energy Communities and New Actors in the Energy Sector; 26/09/2019

CEER work on active consumers and energy communities

White paper on Renewable Self-Consumer and Energy Communities 27/07/2017

Based on existing CEER principles:

- Preserve consumer rights
- Adequate metering is needed to enable active consumption
- Net metering should be avoided
- Avoid cross-subsidies between active and non-active consumers
- Network tariffs should reflect the cost and value to the system
- Level playing field with other generators/suppliers
- Energy communities operating a network should have the same obligations and responsibilities as DSOs

CEER
Council of European Energy Regulators

Available at https://www.ceer.eu/documents/104400/5937686/Renewable+Self-Consumers+and+Energy+Communities-2/2f7ffa53-9b81-dbad-d49a-a6331d6d5150

Report on Regulatory Aspects of Self-Consumption and Energy Communities 28/06/2019

- Engaged with stakeholders and analysed existing case-studies
- Focused on integration of communities and their activities into the regulatory framework:
  - Self-consuming, selling and sharing – integration into energy markets
  - Managing electricity consumption and providing flexibility – introduction into flexibility markets
  - Owning, operating and managing electricity grids . Integration into the regulatory framework of DSOs

Available at https://www.ceer.eu/documents/104400/-/-/8ee38e61-a802-bd6f-db27-4fb61aa6eb6a

Energy Communities and energy transition

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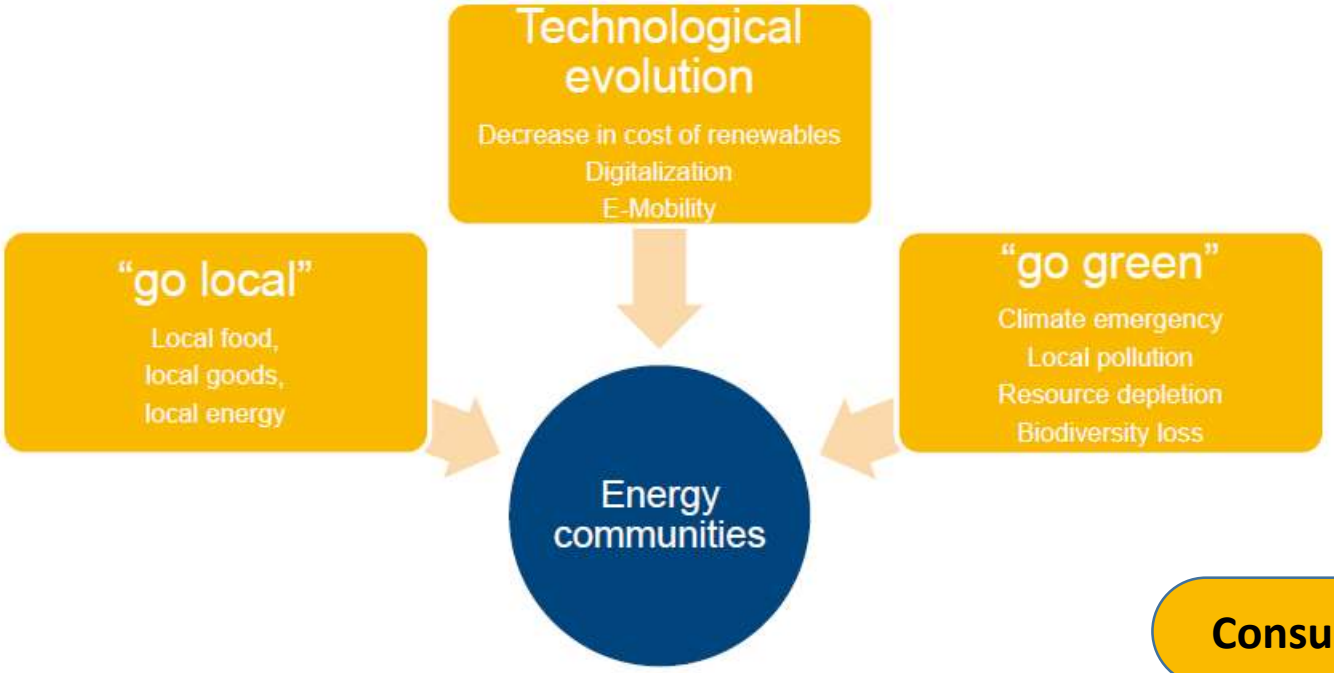
Energy communities respond to global macro-trends

- Energy communities and collective self-consumption are in line with some of today's macro-trends



Source: Xavier Hansen (ILR); "Regulatory aspects of self-consumption and energy communities"; presented at the CEER Training on Energy Communities and New Actors in the Energy Sector; Brussels, 26/09/2019

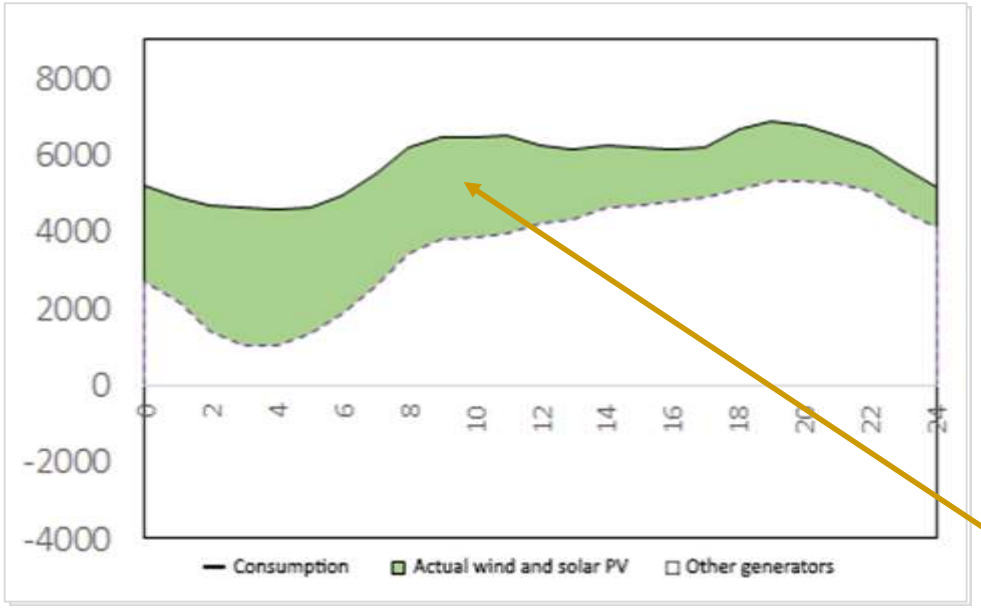
Consumers empowerment

Energy Communities and energy transition

Collective self-consumption and **energy communities** can be:

- **Contributors** for the ambitious objectives planned **for solar PV penetration** in Portugal
- Active **participants providing** some of the needed **flexibility** in the system

Actual



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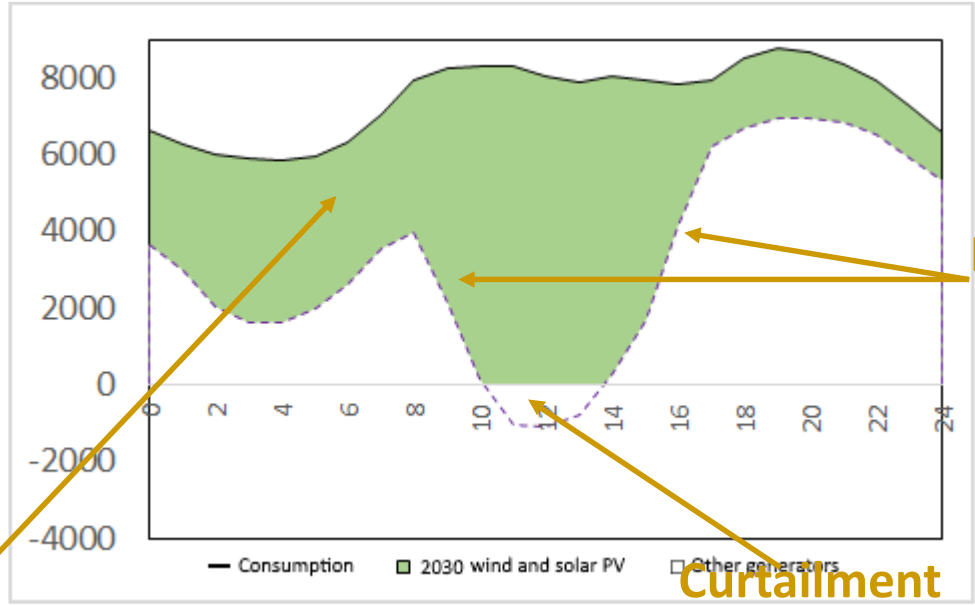


Higher ramps

Curtailment risk

Load covered by wind and solar PV

REC and CEC – Key Differences

	Activities	Geographic scope	Governance	Regulatory treatment	Grid
Citizen Energy Community	Supply, consumption, storage, aggregation and distribution of **electricity**, other energy services	No explicit geographical limitation	Citizens, SME, public authorities - Effectively controlled by members or shareholders	Aim to create a level playing field for communities	Member State may allow CEC to have DSO status
Renewable Energy Community	Production, consumption, storage and selling of **renewable energy**	Members to be **located "in proximity"** of community renewable energy projects	Exclusively citizens, SMEs or local authorities. - Effectively controlled by **local** members or shareholders	Instrument to promote and facilitate the development of RE - Elimination of barriers	?

Adapted from: Xavier Hansen (ILR); "Regulatory aspects of self-consumption and energy communities"; presented at the CEER Training on Energy Communities and New Actors in the Energy Sector; Brussels, 26/09/2019

Collective self-generation and Energy Communities: A framework for electricity sharing

- The CEP establishes **the right to use shared electricity** in addition to traditional supply from the supplier

- How does this impact the relationship between the customer and suppliers/DSO?

Supplier

- Less energy sold to customer by supplier
- Lower predictability of customer consumption
- Higher balancing risk & cost
- Responsibility for kWh based public service obligations
- Obligation to offer the same conditions to all residential customers?

DSO

- Adequate fees should apply if public grid is used
- Any savings for customers must reflect a benefit for the grid

- Aspects to be also considered

Geographic scope

- Within a building
- Behind an LV/MV transformer
- Within a locality (street, postcode, city, etc.)

Participants

- Residential customers
- Non-residential customers
- Renewable /non renewable generation
- Storage
- Allowed number of participants

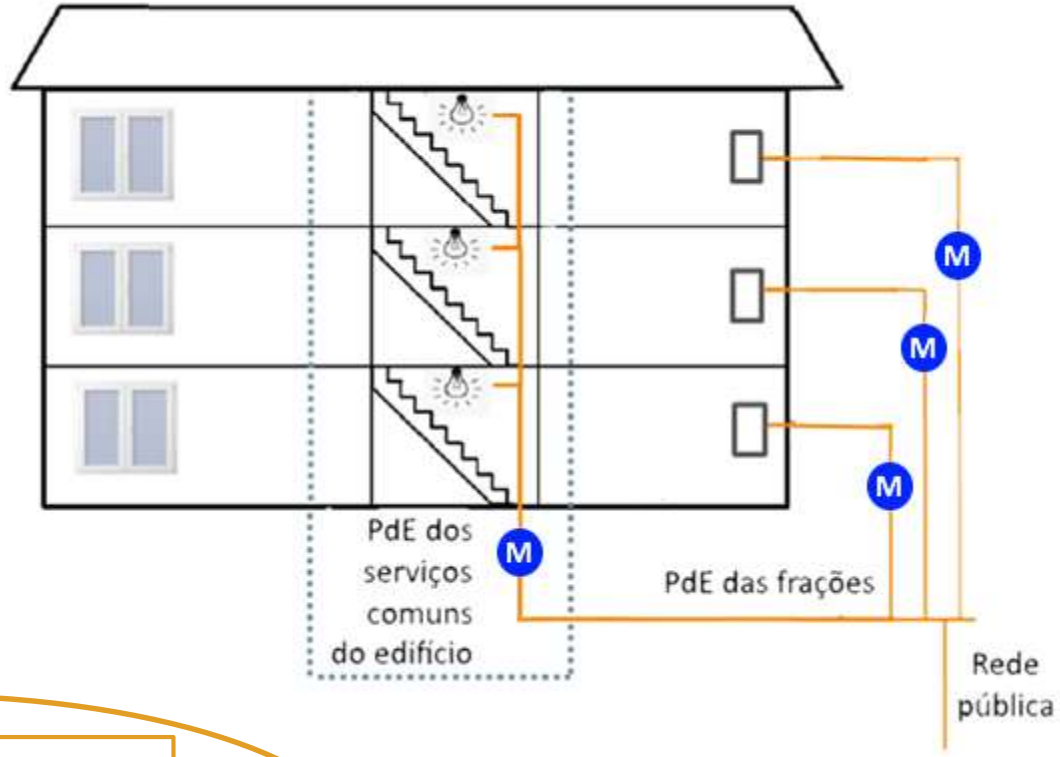
Governance & market interface

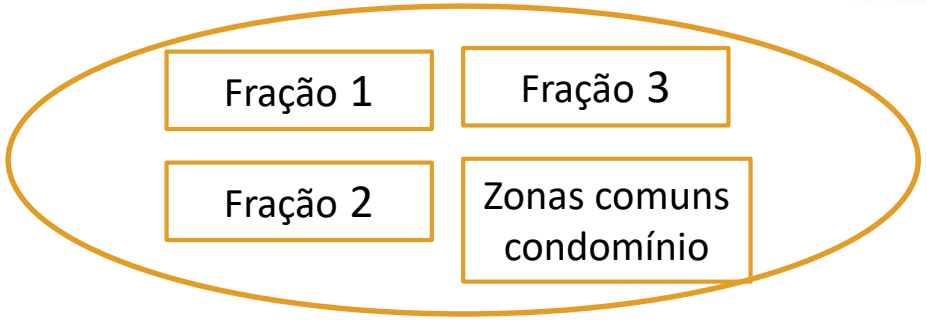
- Legal entity (community?)
- Data management responsibility
- Supplier interface
- Internal billing
- Consumer protection

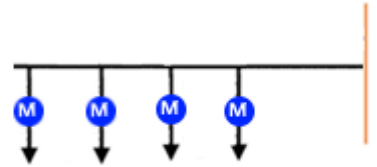
- **National transposition of CEP will shape the answers**

Collective self-consumption and Energy Communities: A framework for electricity sharing

- An example of a condominium with 3 members and common services

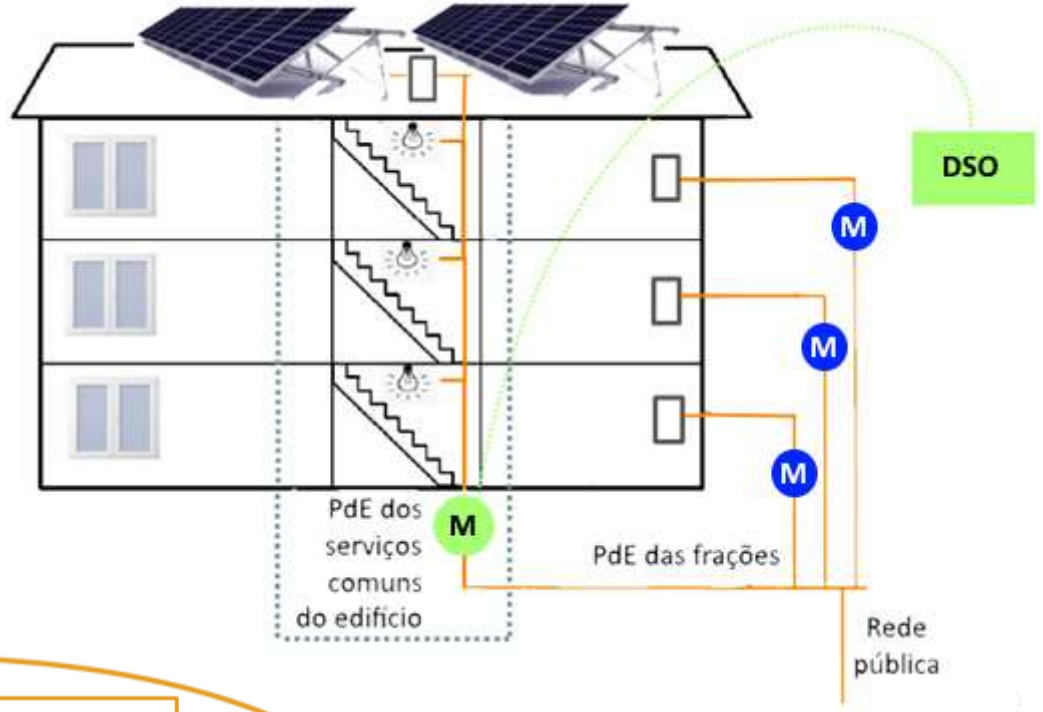


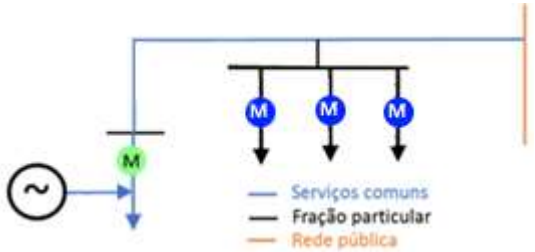




Collective self-consumption and Energy Communities: A framework for electricity sharing

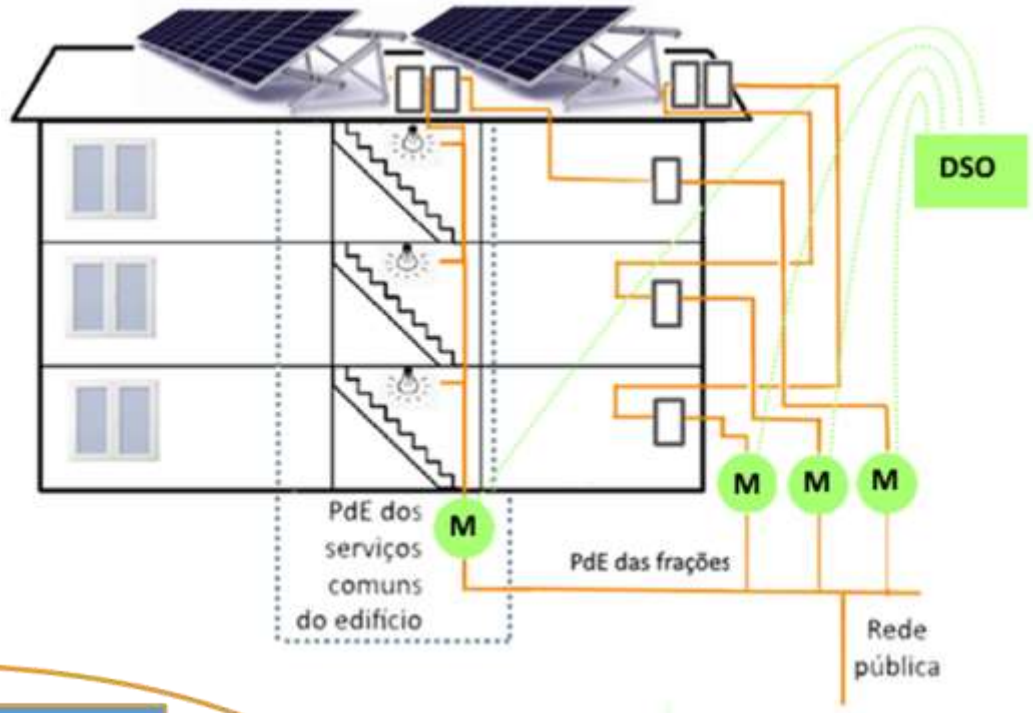
- Today's simpler solution: a self-generator unit connected to the building common services

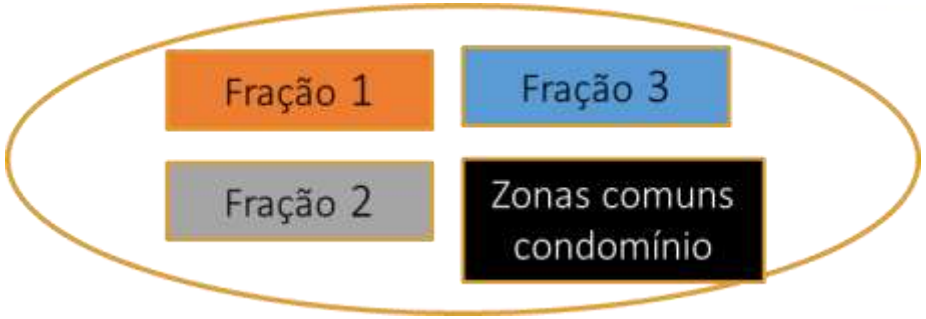


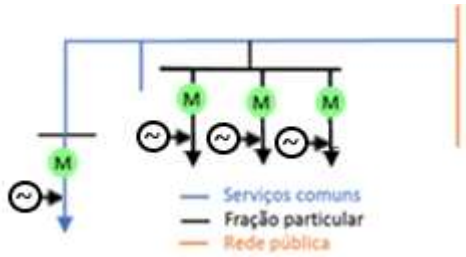


Collective self-consumption and Energy Communities: A framework for electricity sharing

- Members could also install individual self-generation units but the works to be done would be higher

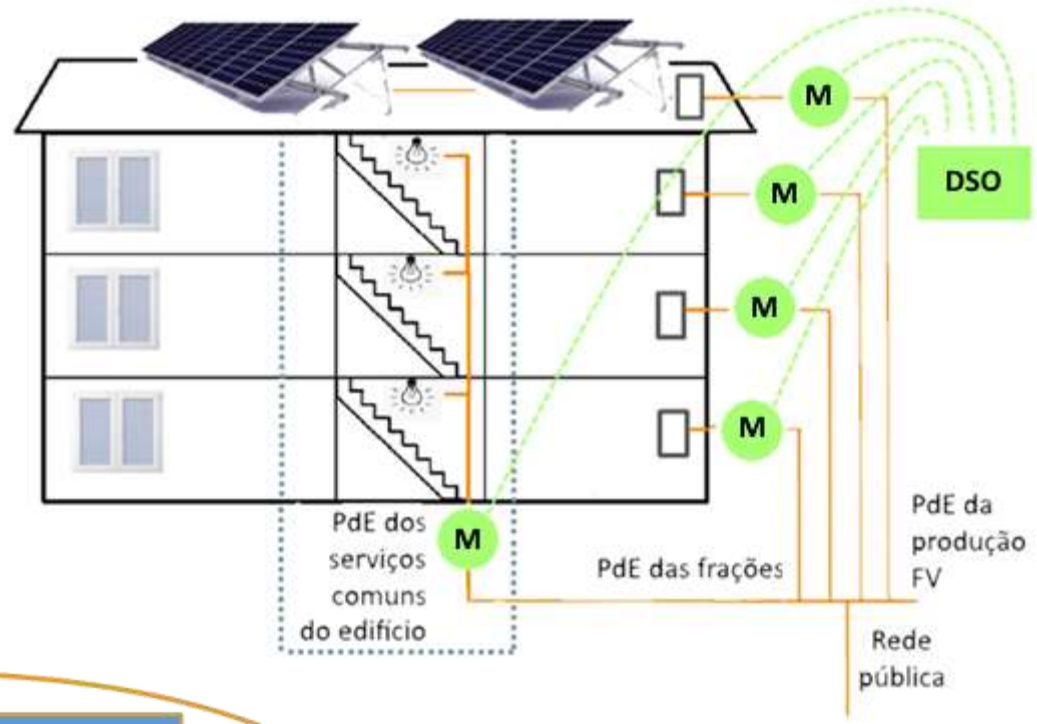


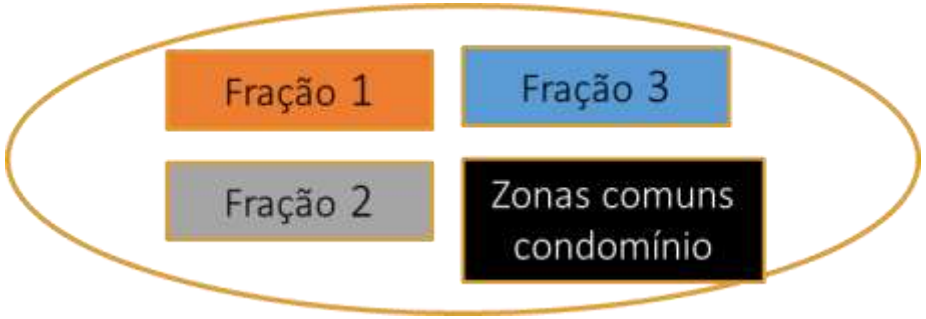


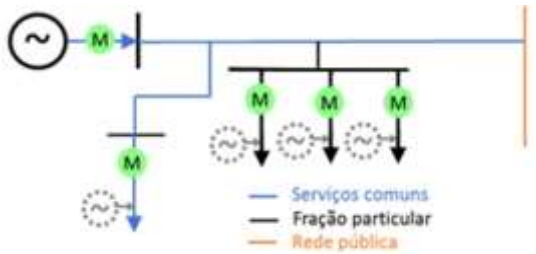


Collective self-consumption and Energy Communities: A framework for electricity sharing

- A collective self-generation unit is based on real-time measurement of the individual consumptions of each owner and of the self-generated electricity sharing between members.







Self-generated energy shared between members

Energy Communities and energy transition

- The Clean Energy Package introduces a **formal framework for active consumers and citizen energy projects**

- From the **regulatory perspective**, **priorities** are:
  - **Safeguard consumers rights**
  - **Ensure Energy Communities operate on a level playing field and unleash their potential for the energy transition**
  - **Avoid Energy Communities being used to bypass existing regulation** (supplier/DSO obligations, adequate network charges, etc.)

Thank you!

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