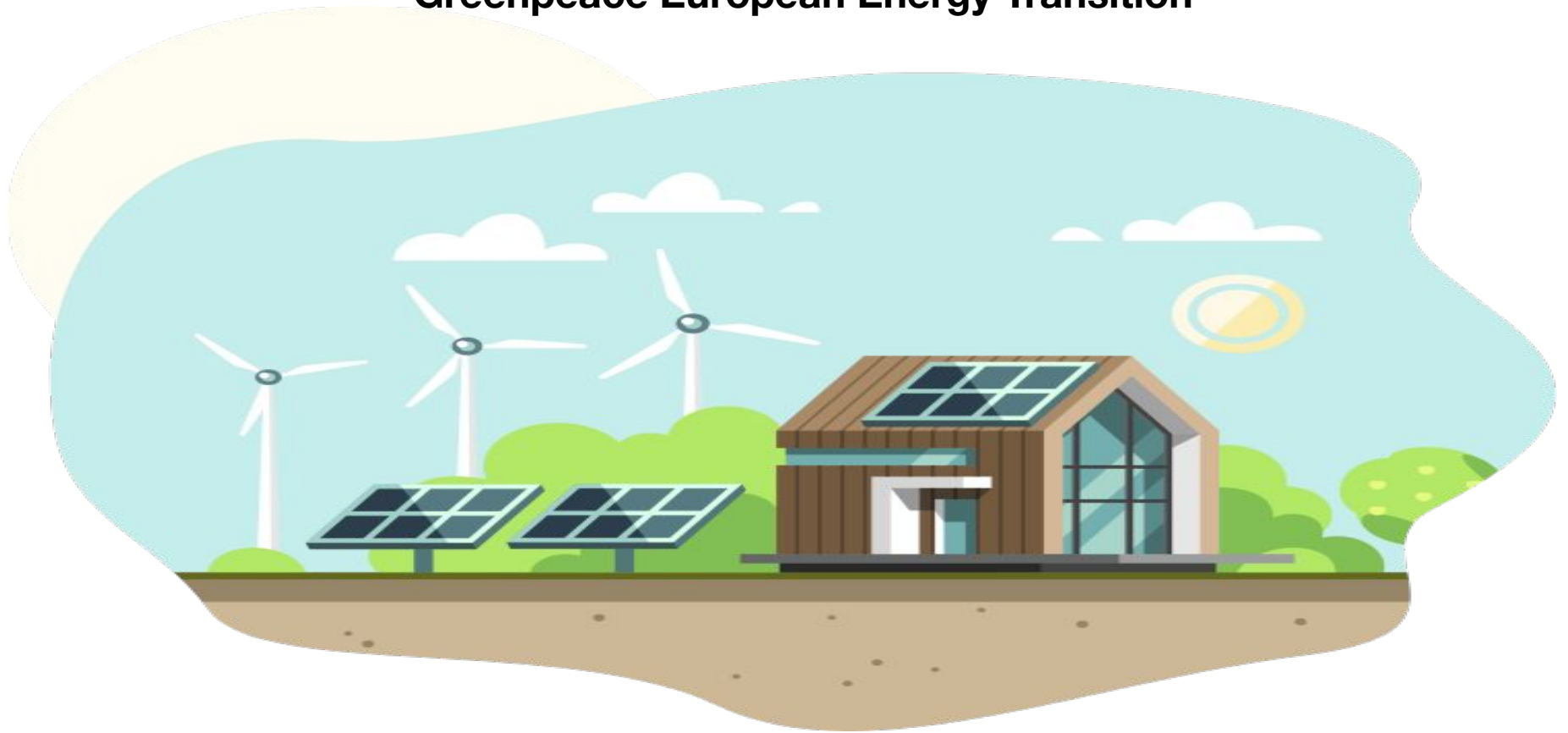


“Solar Collective Self-Consumption” to Achieve a European Decentralised Energy System

Ignacio Navarro
Greenpeace European Energy Transition



WHY IS SO IMPORTANT TO DECENTRALISE THE ENERGY SYSTEM?

- **MORE OPTIMAL USE OF RENEWABLE ENERGY (D&R)**
- **REDUCE DISTRIBUTION AND TRANSMISSION COSTS AND MANAGEMENT**
- **SECURE ELECTRICITY SUPPLY**
- **ALLOW MULTIPLE USERS AND OWNERS, HELP CITIZENS**
- **REDUCE DEPENDENCY ON FOSSIL FUELS AND INCREASE ECO-EFFICIENCY**



WHAT IS COMMUNITY SOLAR COLLECTIVE SELF-CONSUMPTION?



SO WHY IS COMMUNITY SOLAR IMPORTANT IN GREECE?



- **EFFECTIVE SOCIAL POLICIES / ENERGY POVERTY**



- **MORE THAN 60% OF THE POPULATION IN GREECE LIVES IN MULTI-APARTMENTS BUILDINGS**



- **GREEN ECONOMY / GREEN STARTUPS**



EFFECTIVE SOCIAL POLICIES / ENERGY POVERTY

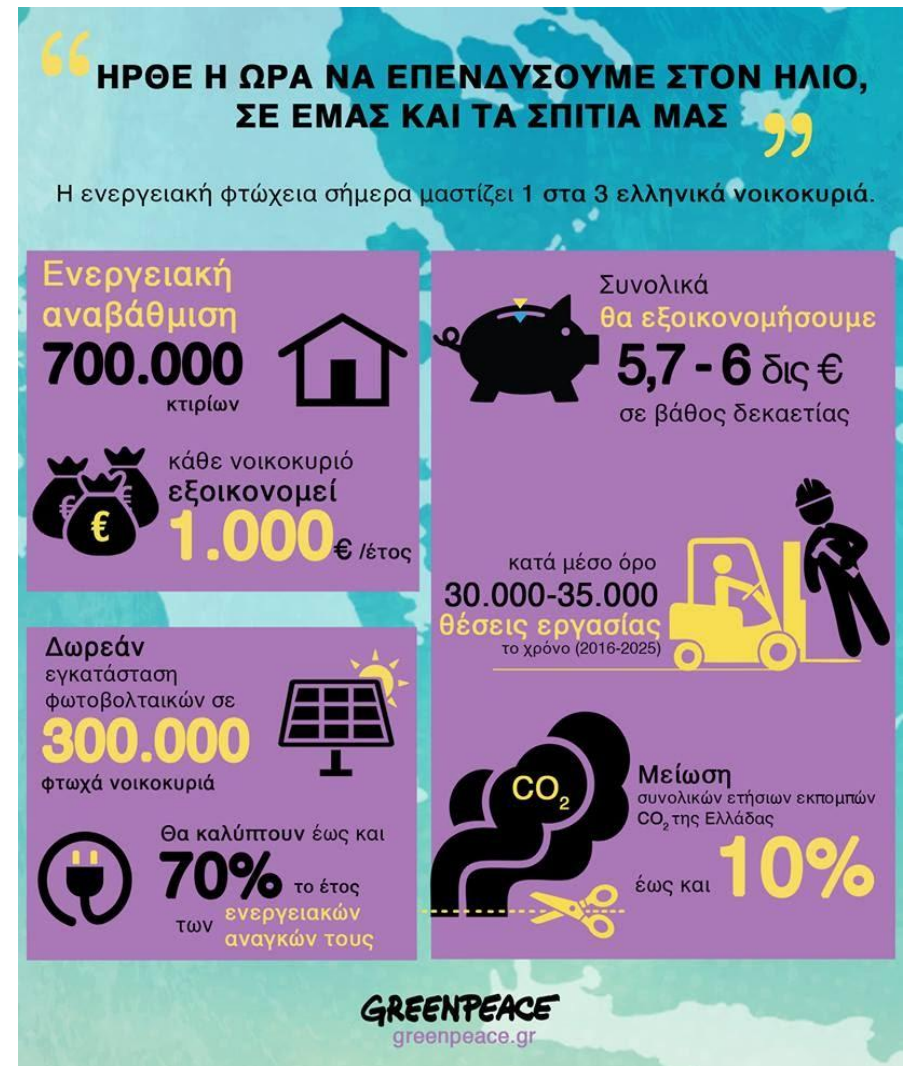


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Providing social care to 340.000 vulnerable households

2kWp / family □ 2.700 – 3.000 kWh (70-80% of their needs) □ 680MWp

Cost est.: 450 mil. €





Σενάριο Α:

Ηλιακή Κοινωνική Πολιτική αποκλειστικά με εγκατάσταση single-family συστημάτων

Μεμονωμένα συστήματα για αυτοπαραγωγή	Έτος	Κόστος 2 KWh (€)	Ευάλωτα νοικοκυριά	Εγκατεστημένη ισχύς MWp	Συνολικό κόστος
	2019	2.600	5.000	10	13.000.000 €
	2020	2.444	5.000	10	12.220.000 €
	2021	2.322	10.000	20	23.218.000 €
	2022	2.206	15.000	30	33.085.650 €
	2023	2.095	25.000	50	52.385.613 €
	2024	1.991	35.000	70	69.672.865 €
	2025	1.891	45.000	90	85.100.428 €
	2026	1.797	55.000	110	98.811.052 €
	2027	1.707	65.000	130	110.937.863 €
	2028	1.621	80.000	160	129.711.963 €
			340.000	680	628.143.432 €

Υποθέσεις:

- Κόστος 2kWh για την ΔΕΗ χωρίς ΦΠΑ 2.600 €
- Ετήσια μείωση κόστους τεχνολογίας 6%
- Σταδιακή αύξηση νοικοκυριών



Σενάριο Β:

Ηλιακή Κοινωνική Πολιτική αποκλειστικά με Community Solar φ/β πάρκα με χρήση εικονικού συμψηφισμού

φ/β πάρκα με χρήση εικονικού συμψηφισμού	Έτος	Κόστος 2 MWp (€)	Ευάλωτα νοικοκυριά	Εγκατεστημένη ισχύς MWp	Συνολικό κόστος
	2019	700.000	5.000	10	7.000.000 €
	2020	658.000	5.000	10	6.580.000 €
	2021	625.100	10.000	20	12.502.000 €
	2022	593.845	15.000	30	17.815.350 €
	2023	564.153	25.000	50	28.207.638 €
	2024	535.945	35.000	70	37.516.158 €
	2025	509.148	45.000	90	45.823.307 €
	2026	483.690	55.000	110	53.205.951 €
	2027	459.506	65.000	130	59.735.772 €
	2028	436.531	80.000	160	69.844.903 €
			340.000	680	338.231.079 €

Υποθέσεις:

- Αρχικό κόστος 1MWp για την ΔΕΗ, χωρίς ΦΠΑ, 700.000 € (συντηρητική εκτίμηση)
- Ετήσια μείωση κόστους τεχνολογίας, 6%
- Σταδιακή αύξηση νοικοκυριών



Κατανάλωση Κοινωνικού παντοπωλείου - Φαρμακείου - Ιατρείου

Κατανάλωση Σχολείου

Κοινωνική πολιτική σε 15 νοικοκυριά στην γειτονιά

Κατανάλωση Δημοτικού Μεγάρου

© 2018 Google

Google Earth

2001

37°52'12.91" B 23°45'02.80" E ανύψ 35 μ eye alt 106 μ

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EXAMPLES BY PUBLIC AUTHORITIES

Municipality Thessaloniki 2017



- 10 kWps Virtual Net metering
- Primary school/Municipal orphanage
- Cost: 11k€
- Break even 7 years
- Solar trainings and awareness

Municipality Larissa 2018



- 15 kWps Virtual Net metering
- Primary school/Municipal elderly center
- Cost: 14k€
- Break even 6 years
- Solar trainings and awareness



GREEK LEGAL FRAMEWORK “COMMUNITY SOLAR SELF-CONSUMPTION”

- ENERGY COMMUNITIES FRAMEWORK 4513/2018 (January 2018)
- SELF-CONSUMPTION LEGISLATION: MINISTERIAL DECISION FOR VIRTUAL NET METERING (May 2019)



- **ENERGY COMMUNITIES FRAMEWORK 4513/2018**
(January 2018)

REGULATION BACKGROUND

Starting point	Characteristics	Result
Opening up the energy market - What the subjects of the transition	Possibility of synergies between Local Communities, Businesses and individuals wishing to be active in Energy	Added value - Change in production model
Creating a tool that will help increase RES penetration and local acceptance	Special care for insularity, geographical and local approach	Creating conditions for regional development and productive reconstruction
Helping to solve energy poverty issues in Greece	Model of democratic participation in the decision-making process (1 member - 1 vote)	Decentralization of Production - Enhancing innovation

ΧΡΟΝΟΛΟΓΙΟ

Need for an Integrated Institutional Framework - Greece pioneer:

- January 2017: A Working Group was set up with the participation of various REST Bodies and Services and other relevant Ministries and Bodies
- Examples of various Energy Cooperative Operations (Denmark, Germany, Belgium, etc.) were examined
- The proposed revisions of European Directives **2009/28 / EC and 2009/72 / EC as presented in the Clean Energy Package for the 2030 objectives have been taken into account.**
- The articles of the Law were edited and prepared
- June 2017: The Draft Law is in Public Consultation
- Collection and Processing of Public Consultation Comments
- KENE (Central Legislative Committee)
- Parliament
- **Parliament - Resolution 17/01/2018 - Law 4513/2018**

DEFINITION-PURPOSE

The Energy Community (EC), is an exclusive urban cooperative aiming to promote social and solidarity economy and innovation in the energy sector, tackle energy poverty and promote energy sustainability, production, storage, self-consumption, and energy supply, enhancing energy self-sufficiency / security in island municipalities as well as improving energy end-use efficiency at local and regional level.

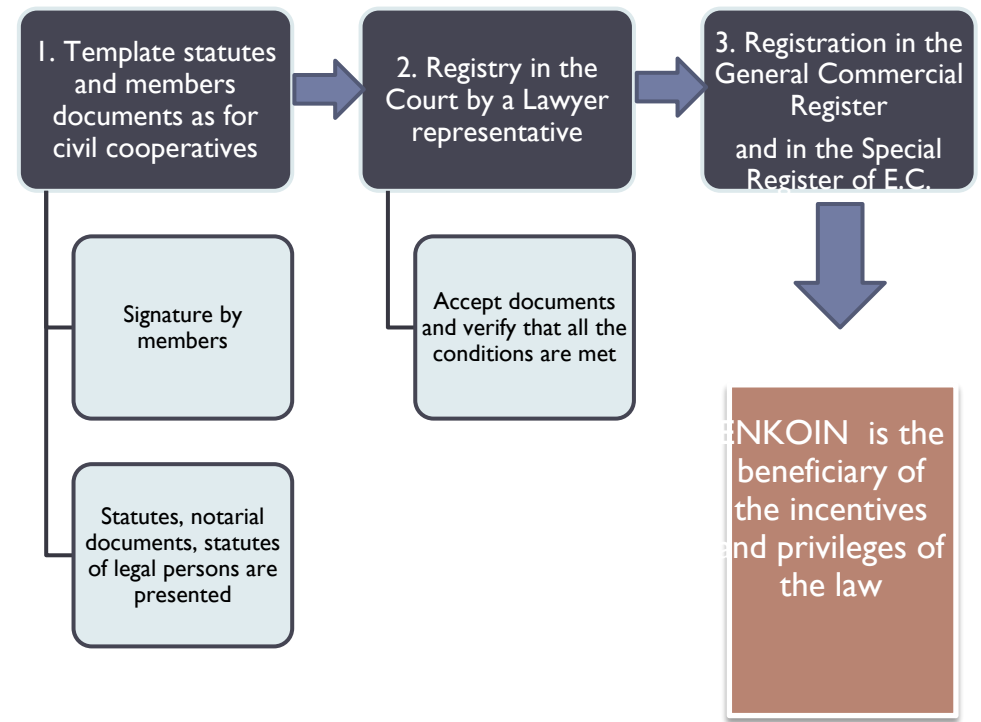
Who can participate:

- Individuals
- Public entities
- Legal entities of private law
- OTA a & b) grade of the same district
-

Locality criteria

At least 51% of members must relate to the place where the EC headquarters is located, and in particular natural persons - members to have full or limited ownership or ownership of a property located within the district of the EC headquarters, or to be residents of a municipality in that region and to have its legal persons established within the district of its seat of EC.

Recommended process



Types of ECs

Character	Minimum of members	Profits allocation	Cooperativism
<p>Non-Profit Character - No surplus distribution capability</p>	<ul style="list-style-type: none"> □ 5 members, if the members are legal entities governed by public law or natural persons (5 * 20%). Max 205 ownership per member □ 3 members, if the members are only OTAs. (e.g. 35%, 35%, 30%) □ 3, where the members are legal entities governed by public or private law or natural persons, at least two (2) of whom shall be local authorities. (20%, 40%, 40%) □ 2, if the members are local governments and are in an island area (50%, 50%) 	<ul style="list-style-type: none"> □ Profits are not allowed to be distributed - Reserve and disposal for EC purposes. □ Exception for islands (<3100), a portion of the profits may be allocated to utilities of a local nature 	<ul style="list-style-type: none"> ✓ Each member may hold in addition to the mandatory co-operative share one or more optional co-operative shares, with a maximum holding of 20% in the co-operative capital, with the exception of OTAs. that can participate in cooperative capital with a maximum of 40%.
<p>For profit - Distribution of surplus between the members</p>	<ul style="list-style-type: none"> □ 15 members, in case the members are legal entities - other than OTAs - or private legal entities or natural persons □ 10 members, if in an island municipality (<3100) □ 50% plus one of them are natural persons □ profit distribution is allowed 	<ul style="list-style-type: none"> □ The distribution of the net profit balance is allowed after deduction of reserves to members. 	<ul style="list-style-type: none"> ✓ <u>Islands Special Condition</u> ✓ <u>Particularly for the islands (<3100 inhabitants), the participation rates of OTAs. can reach 50%.</u>

- ✓ Each member shall have one vote, regardless of the co-operative capital he holds.
- ✓ The " not-for-profit " or " not-for-profit " character of E.Coin. it stays on throughout.



● MINISTERIAL DECISION FOR VIRTUAL NET METERING (May 2019)

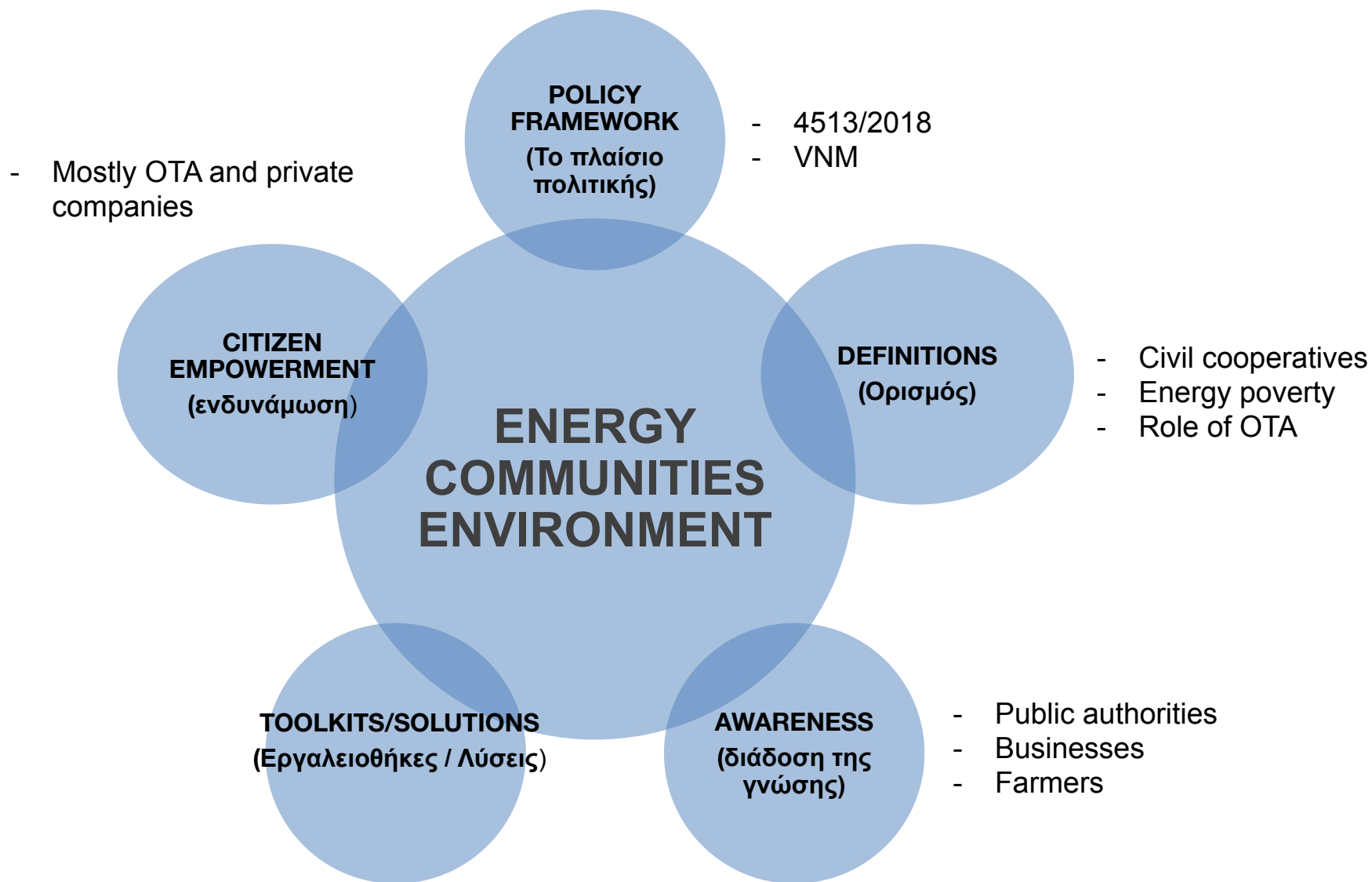
Citizens, public authorities and private entities can collectively invest in community solar self-consumption by registering a non-for-profit energy community with that purpose.

Operational rules:

- < 1 MWps solar for collective self-consumption.
- **Geographical location:** within the same peripheral region (province, regional area)
- Standard solar self-consumption energy price = **0,05 €/kWh (0,177 €/kWh)**
- Surplus of electricity generated is reduced in the next energy bill (< 3 years term)
- **25 years contract**
- All members must contract with the **same energy provider**. Energy communities don't need to register as "energy providers"
- DSO provide periodical customers data to the energy provider and the Energy Community



ENERGY COMMUNITIES ENVIRONMENT: 5 PRIORITY AREAS



ENERGY COOPERATIVES MARKET



1M+ cooperative members

1B€+ in yearly turnover

1250 energy cooperatives

\$40B+ in revenue

\$175B worth of assets owned

\$13B invested annually



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