

## Energy Communities

Smart Energy Systems  
7/7/2018

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## Clean Energy Package

Provides opportunities for grid users and network operators to contribute to the more flexible, decentralized and digitized energy system of the future



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### Recast Electricity Directive

#### Art 16 Local energy communities (LECs)

*“An association, a cooperative, a partnership, a non-profit organization or other legal entity which is effectively controlled by local shareholders or members, generally value rather than profit-driven, involved in distributed generation and in performing activities of a distribution system operator, supplier or aggregator at local level, including across borders.”*

- 1.(a) are entitled to **own, establish, or lease community networks** and to autonomously manage them
- 1.(e) where relevant, may conclude **agreements with the DSO** to which their network is connected
- 2.(a) participation in a local energy community is **voluntary**
- 2.(c) shareholders or members are **allowed to leave** a local energy community
- 2.(d) generating capacity installed by local energy communities as long as such capacity can be considered **small decentralised or distributed generation**
- 2.(g) subject to **fair and cost-reflective network charges**

## (Local) Energy Communities

### Better alternative than ad hoc solutions

#### Direct line

*De Standaard, 6 april 2018,  
Wim Winckelmans*

Vlaamse bedrijven mogen straks een directe lijn aanleggen tussen hun bedrijf en een windmolen of zonnepark, zonder via het distributienet te passeren. 'Dit wordt een gamechanger.'

#### Bedrijf mag rechtstreeks tanken uit zonnepark

#### Benefits of a Local Energy Community

- No extra cable (lower system cost)
- Matching supply and demand with multiple parties (more widely applicable)

#### Closed distribution system

*a system which distributes electricity or natural gas within a geographically confined industrial, commercial or shared services site and does not supply household customers with electricity or natural gas, and which meets specific requirements*

#### Benefits of a Local Energy Community

- Less restrictions in terms of participants (more broadly applicable)
- Fair contribution to net and costs for public service obligations (more social)

## Role of the distribution system operator

The role of the grid operator lies in making Local Energy Communities possible on public infrastructure and safeguarding the freedom of choice of the consumer

	network installation	monitoring	management	settlement	Link to the Regulated market
Scenario 1	Regulated task	Regulated task	Regulated task	Regulated task	Allocation of clients in groups - Sharing of Energy
Scenario 2	Regulated task	Regulated task	Regulated task	Non Regulated Task	One EAN for one group
Scenario 3	Regulated task	Regulated task	Non Regulated task	Non Regulated Task	Public network in function of private use inclusive public meters
Scenario 4	Regulated task	Non Regulated Task	Non Regulated Task	Non Regulated Task	Public network in function of private use exclusive public meters
Scenario 5	Non Regulated Task	Non Regulated Task	Non Regulated Task	Non Regulated Task	Privately owned network

Public

Private

#### Rationale

Public infrastructure **safeguards free choice of suppliers** by offering opt-out services

Public grid management **ensures synergy and lowest system costs**

Private control of fluxes **allows local use of locally generated energy** in an optimal way

Private settlement (for LEC participants) **allows alternative business models**

## New customer segment for the grid operator

Local Energy Communities as a new **customer segment** with the need for a next generation offer

### 1 Collective (community) connection

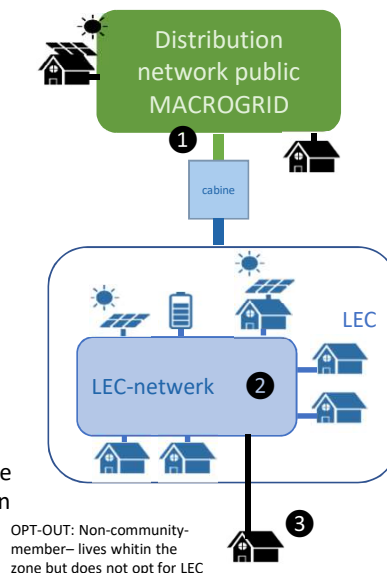
Connection to a common (connection)point with the public macrogrid. Optional support for island operation can be offered at this point.

### 2 Management of the LEC network

Management of the (public) LEC network according to the standards of the public distribution network. This includes construction, maintenance and interventions. Control of energy fluxes is done by the Local Energy Community.

### 3 Opt-out services for non-participants

Unburdening of the LEC from this obligation. Non-participants receive a regular connection to the public distribution network. Consumption and injection are corrected at the coupling point



## Projects for further development

We test this approach in different projects and from there we can share experiences aimed at transposing the EU directives into national regulations



### MSLEC Mechelen

Elaboration of the division of roles for collaboration between public and private parties in a Local Energy Community



### Green Energy Park Zellik

Development of an approach for a CO<sub>2</sub>-neutral, self-sufficient micro grid with evolving regulations and business models. Study of the feasibility of a Living Lab



### Ecodistrict Gantoise

Future-oriented business model for energy services based on cooperation between project developers and residents with energy costs that are no higher than "normal".