



Citizens at the core of the energy Transition

Friday 19 October 2018, EUFORES IPM Meeting

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AMBITION

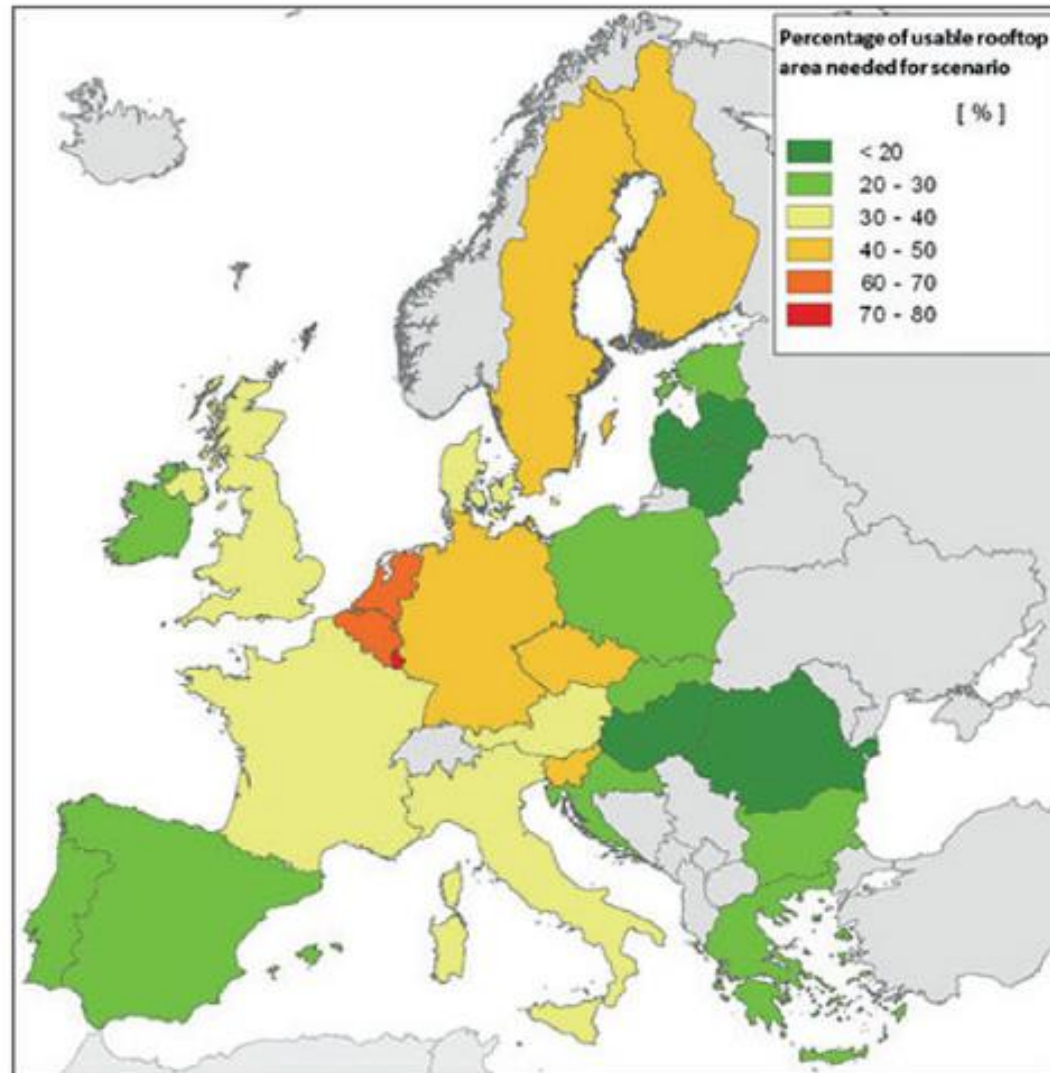
Citizen energy delivering on Europe's climate commitments

Rooftop PV can deliver on the Paris Agreement !

- ✓ IEA 2016 Energy Technology Perspectives reports an estimate potential in EU urban areas for over 500 GW of PV (35% of a 100% RES Scenario)
- ✓ If all suitable rooftop area could be used for PV generation this would result in more than 1500 TWh of electricity generation (Lappeenranta University of Technology)
- ✓ Compared to the available potential, the 380 TWh electricity needed from PV systems to reach 35% renewable energy use by 2030 requires only a quarter of the total area

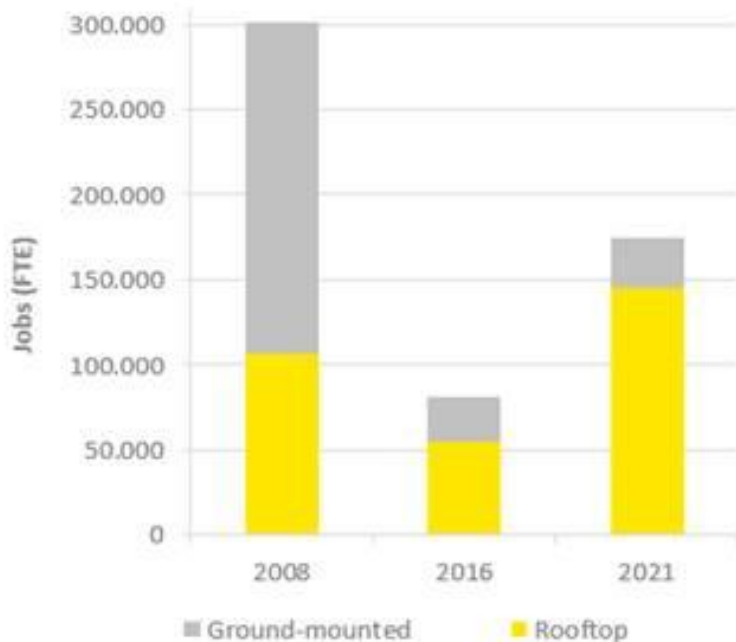
CITIZENS DELIVERING ON CLIMATE AMBITIONS

Figure 5: Percentage of available rooftop area that would be necessary to reach the 2030 scenario of 35% renewables, provided all PV installations would be on roofs.



THE EXAMPLE OF SMALL-SCALE SOLAR

Direct and indirect jobs supported by the PV industry in EU28, by market segment (rooftop and ground-mounted)

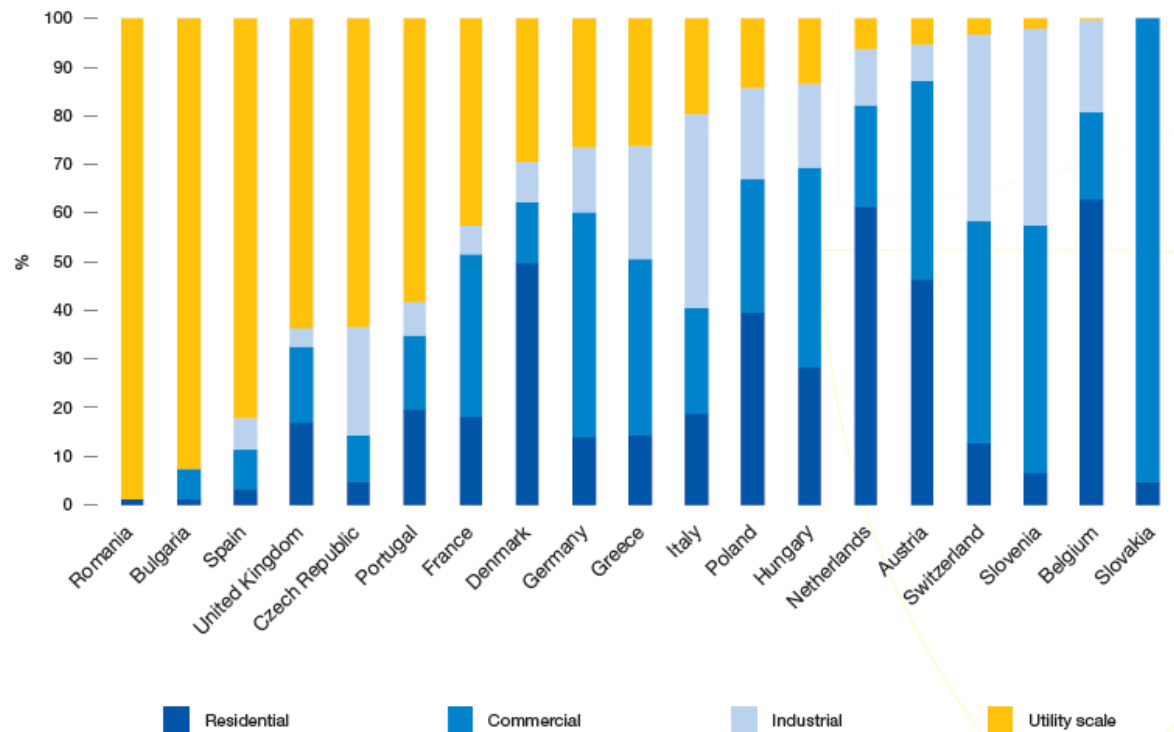


- ✓ Rooftop PV provides three times more jobs than ground mounted installations
- ✓ In 2021 small-scale installations will provide 150 000 jobs for the PV sector only
- ✓ Sectors installing, maintaining and operating small scale installations are also important creators of local sustainable highly-skilled jobs

THE WAY FORWARD

THE NEXT EU CHALLENGE: REDISTRIBUTE THE SOCIO-ECONOMICAL BENEFITS OF THE SOLAR REVOLUTION

FIGURE 27 EUROPEAN SOLAR PV TOTAL CAPACITY UNTIL 2017 FOR SELECTED COUNTRIES



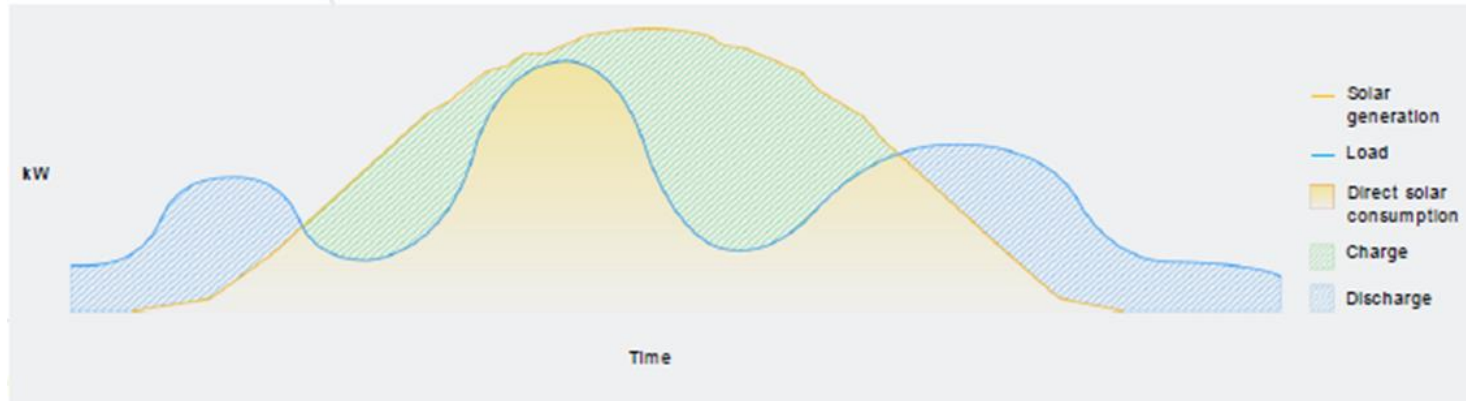
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SYSTEM-EFFICIENCY

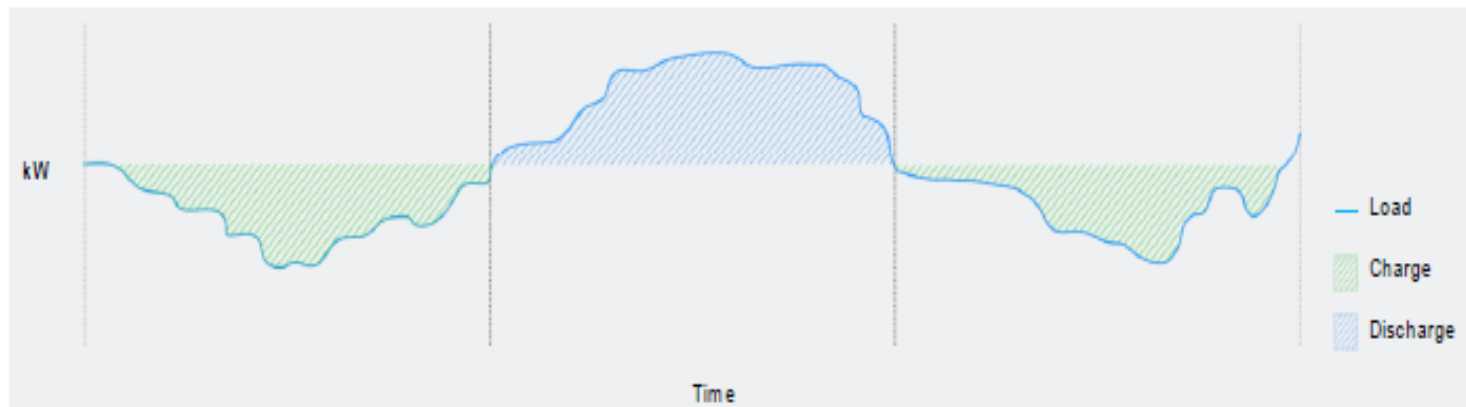
Citizen energy supports a smarter and more reliable electricity system

DIGITAL & STORAGE TECHNOLOGIES

Optimize the value of Solar

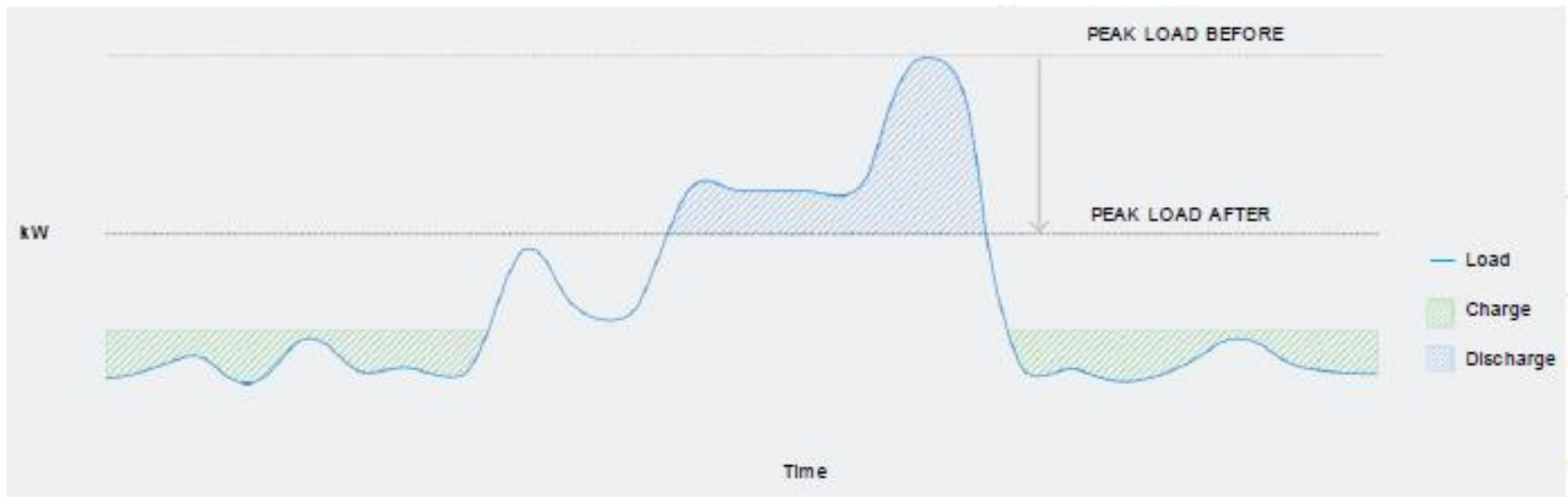


Stabilize electricity prices



DIGITAL & STORAGE TECHNOLOGIES

Reduce network costs and the need for grid investments



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INNOVATION

Citizen Energy drives Europe's industrial leadership

INDUSTRIAL LEADERSHIP IN ADVANCED SYSTEM MANAGEMENT AND SERVICES



THE BROOKLYN MICRO-GRID



A project started in early 2015 bringing together New-York based start-up **LO3 Energy** and **Siemens**.

- **Peer to Peer trading** through a mobile application and enabled by a Data Platform based on blockchain
- **Microgrid system** including a battery facility
- **3 neighbors in 2016, 60 sites connected today, hundred more to come**

GRID SENSE - ALPIQ SWITZERLAND

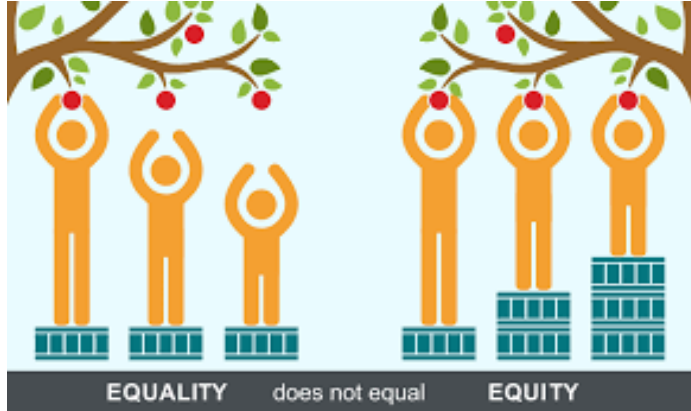


- **Uses adaptive intelligence** to gauge, learn and anticipate user behavior
- **Gathers data** from Internet (weather forecasts, electricity prices...)
- **Monitors electrical equipment** to optimise the time of their consumption
- **Optimises the time of release of excess electricity to the grid**, through sensitivity to tariffs

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CITIZEN ENERGY AND THE ELECTRICITY MARKET DESIGN

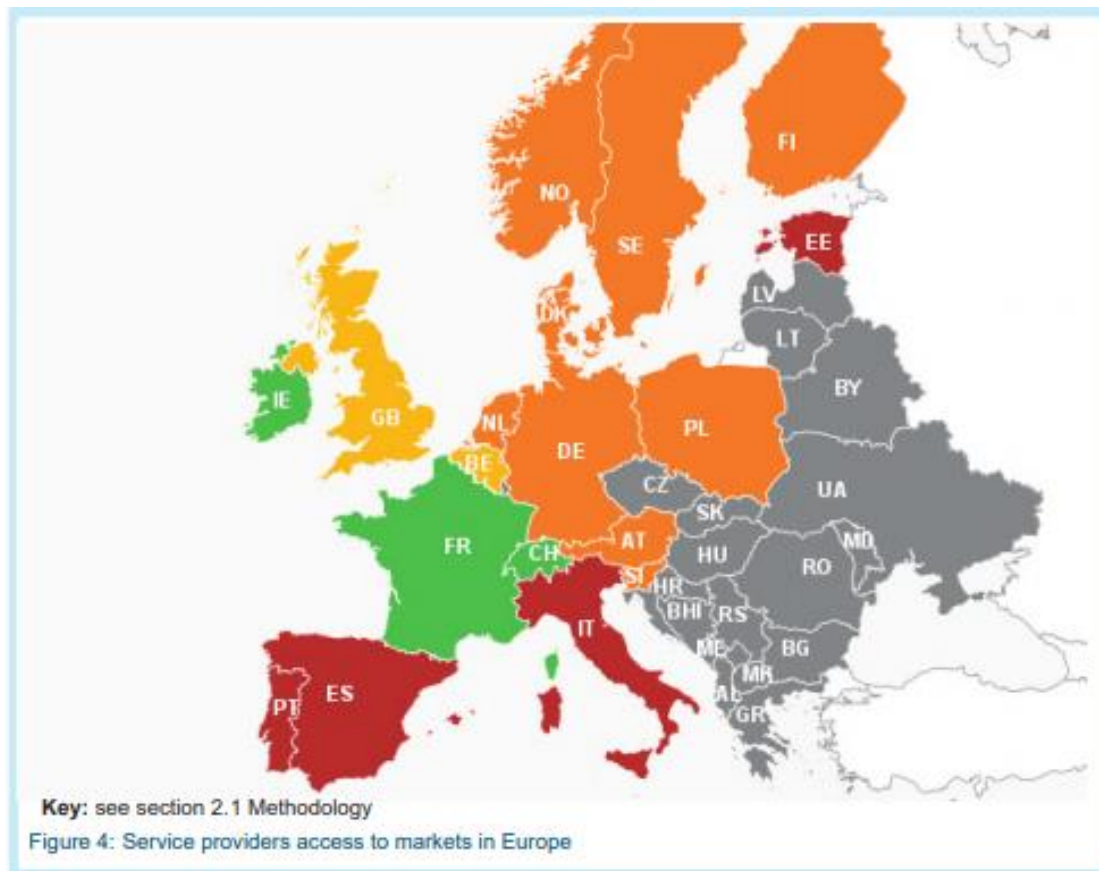
WHAT WE NEED: STEP-WISE MARKET INTEGRATION FOR SMALL-SCALE PLAYERS



Art 4-11 Electricity regulation

- ✓ Keep priority dispatch and balancing responsibilities exemptions for Small scale and high efficiency cogeneration installations below 500kw
- ✓ Market readiness as a pre-requisite for exposing small-scale players to market bidding and balancing

REALITY CHECK



ISSUES	
« Tying practice »	Small-scale producers don't have the same means to comply with market requirements (bidding, balance responsibility). They are therefore « forced » to outsource this service to a third party, which has an additional cost.
Additional administrative and financial burden	As small-scale producers cannot internalize these requirements, they will imply additional administrative and contractual requirements for owners of Solar panels.
Unfair treatment	In countries where aggregation and balancing services are not developed/competitive, small-scale producers can be exposed to unfair prices from market players.
Revenue uncertainty	Such requirements increase significantly revenue uncertainty for small-scale players: Priority dispatch: no remuneration if the bid isn't considered by the system operator Balancing responsibility: Balancing penalties can amount up to 12% of the Feed in Tariff

THE SMALL IS BEAUTIFUL CAMPAIGN



THANK YOU!

a.beauvais@solarpowereurope.org

