

Interreg
CENTRAL EUROPE



PROSPECT2030

European Union
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DI TORINO**

Dipartimento Energia
"Galileo Ferraris"

TAKING
COOPERATION
FORWARD



Integrated energy systems and RES
April 30th



The legal and regulatory framework for energy communities: challenges and opportunities



PROSPECT2030 | Politecnico di Torino | Giulio Cerino Abdin



Recast to 2030
(RED II)

Italian
Transposition

Collective Self-
consumption
Groups

Renewable
Energy
Communities

Collective Self
Consumption
Group | Focus

Renewable
Energy
Communities |
Focus

Criticalities and
Opportunities



RENEWABLE ENERGY - RECAST TO 2030 (RED II)



DIRECTIVE (EU) 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)

National Transposition



[...]



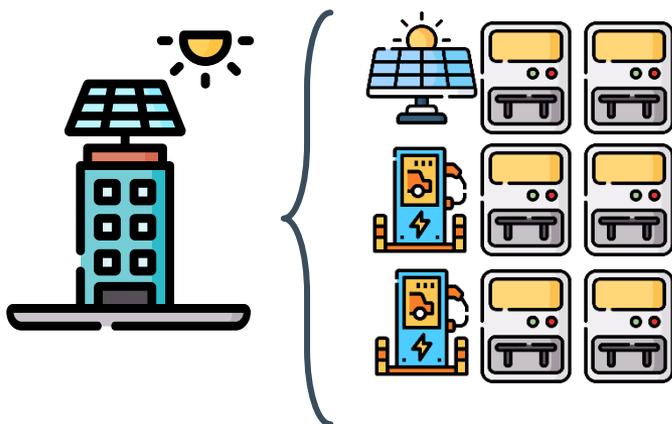
Different criteria based mainly on: distances between users, grid topology...





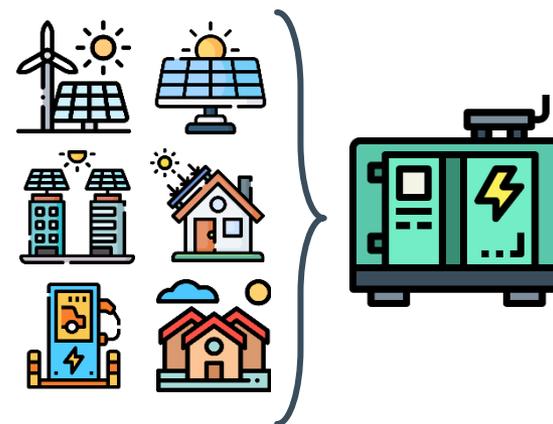
@building
level

Collective Self Consumption Groups



@MV/LV
level

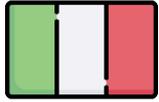
Renewable Energy Communities



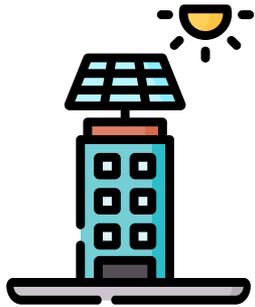
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Collective Self Consumption Groups



single building
multiple users



- **single buildings** (mandatory)
- **RES plants on the building** (mandatory)
 - power < 200 kW (mandatory)
 - typical layout **one RES plant with power < 20 kW** (bureaucratic simplicity)



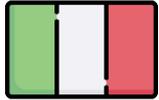
- **different users**
 - located in the same building (mandatory)



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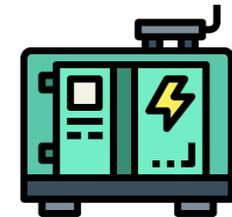
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- Users/plants served by the **same MV/LV transformer**
 - Possible extension to HV/MV after RED II directive transposition
- Multiple RES plants
 - **Power < 200 kW** (mandatory)
- **Different users**
 - Residentials, PMI, PA, Local Authorities
 - Users, Producers, Prosumers

Renewable Energy Communities



multiple plants
multiple users

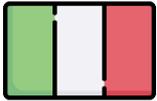


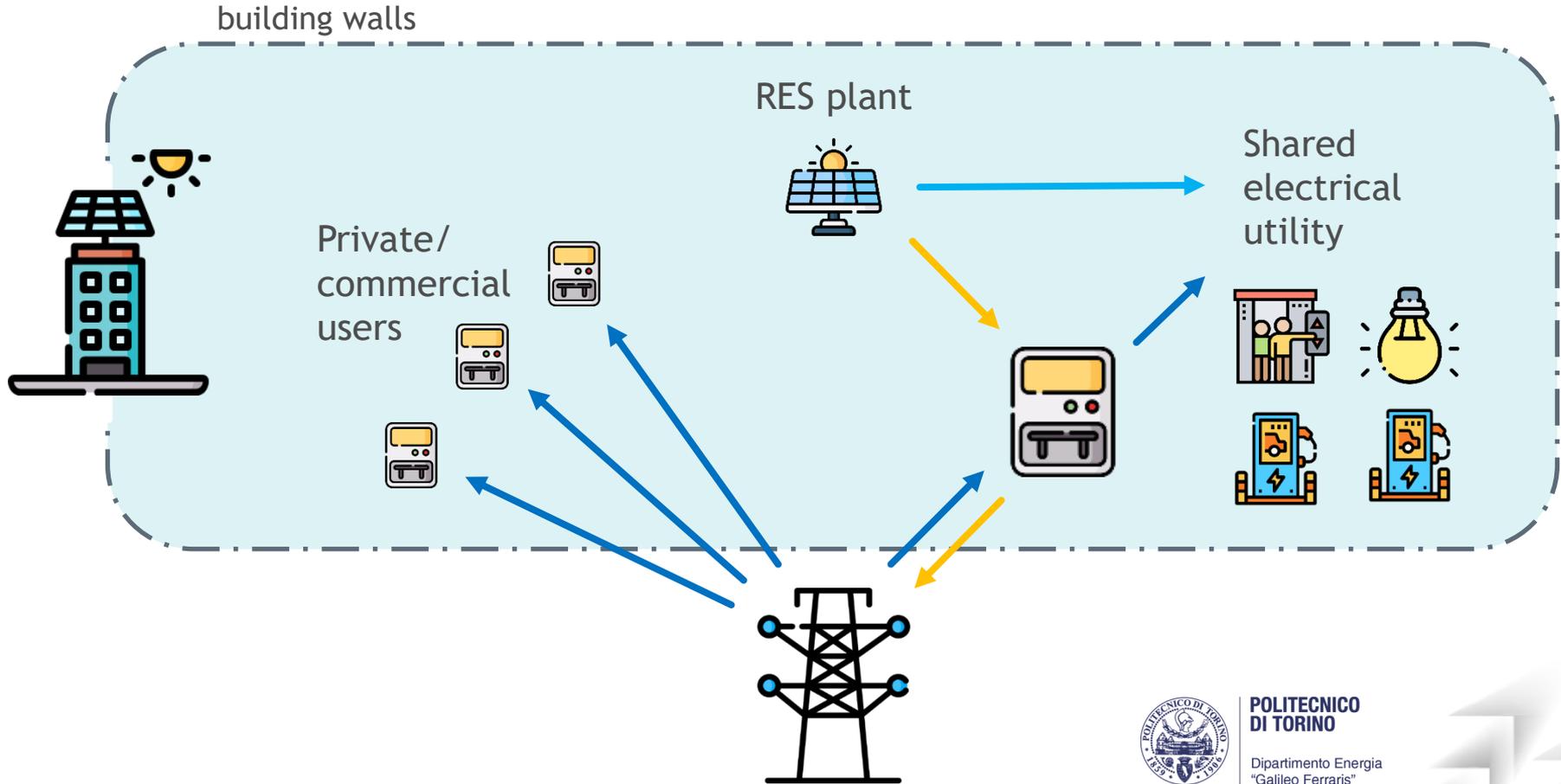
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SELF CONSUMPTION GROUP | ACTORS AND ROLES

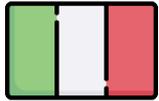
 **SELF CONSUMPTION GROUP | ACTORS AND ROLES**



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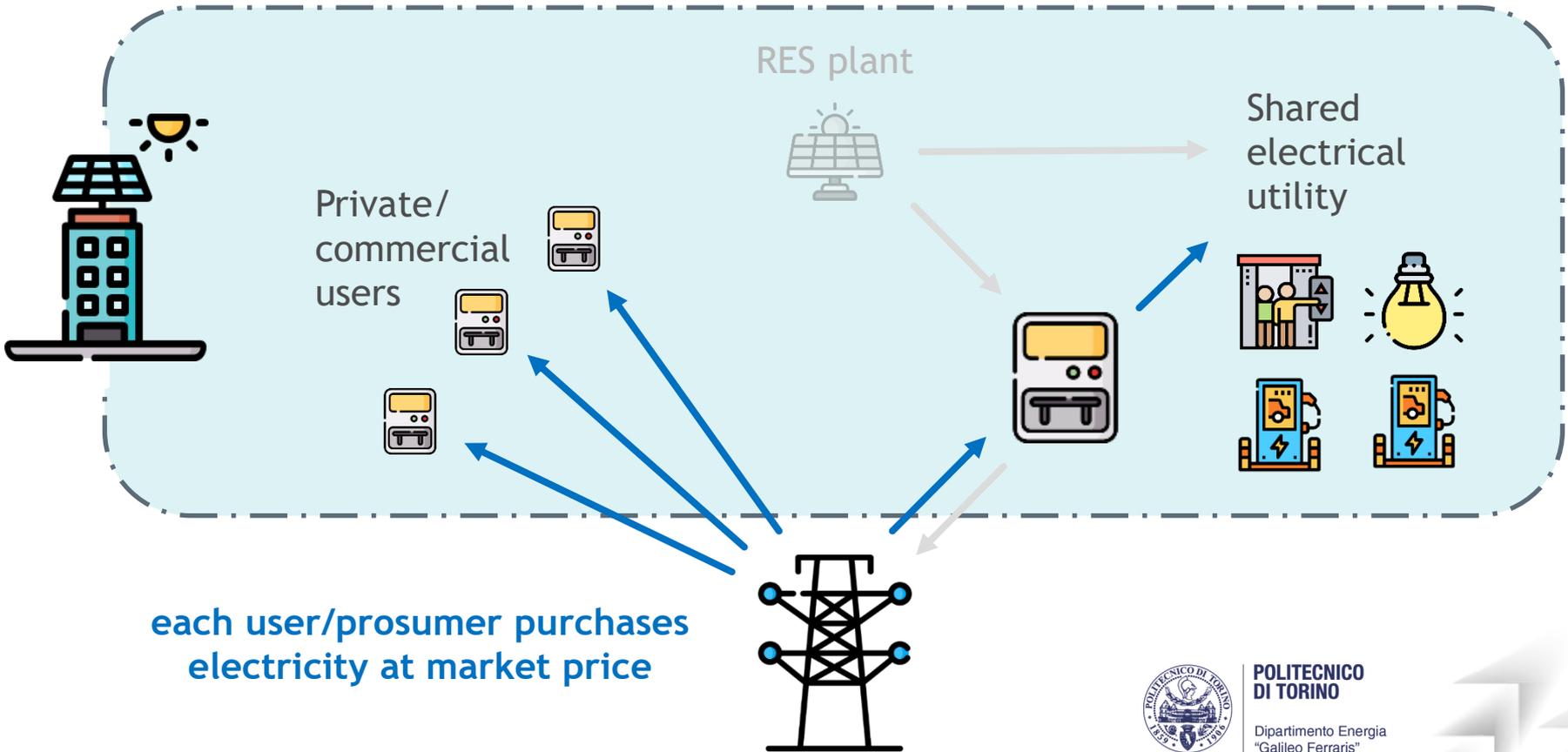


REC | ACTORS AND ROLES



**SELF CONSUMPTION GROUP |
ENERGY PURCHASING**

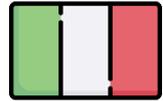
building walls



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REC | ACTORS AND ROLES



**SELF CONSUMPTION GROUP |
DIRECT SELF CONSUMPTION**

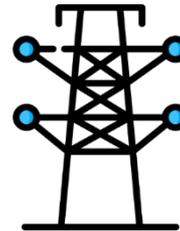
building walls

RES plant

Shared
electrical
utility

Private/
commercial
users

The condominium saves money
with self consumption of shared
electrical utility ~0,15 €/kWh



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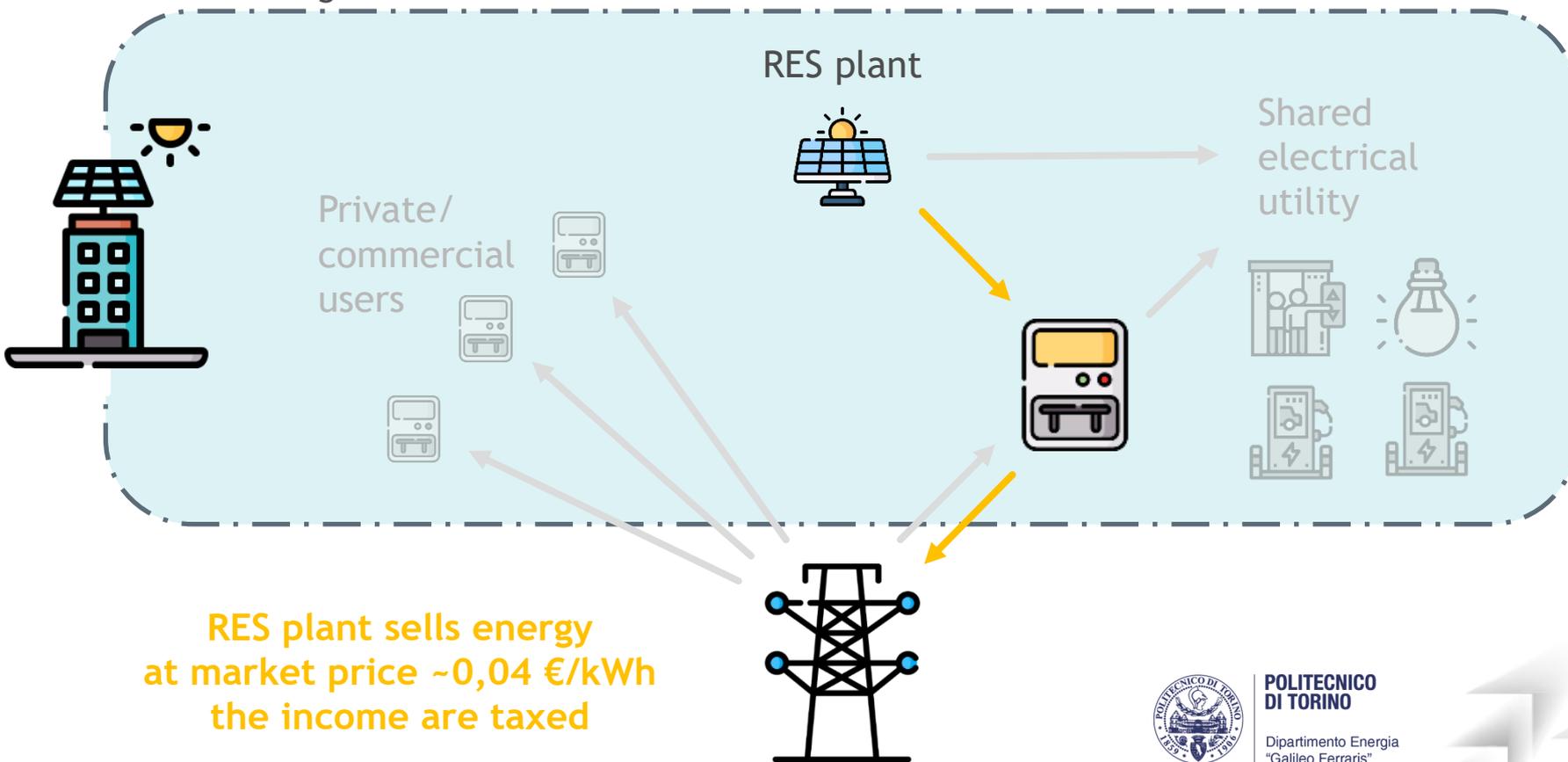


REC | ACTORS AND ROLES



**SELF CONSUMPTION GROUP |
ENERGY SELLING**

building walls



**RES plant sells energy
at market price ~0,04 €/kWh
the income are taxed**



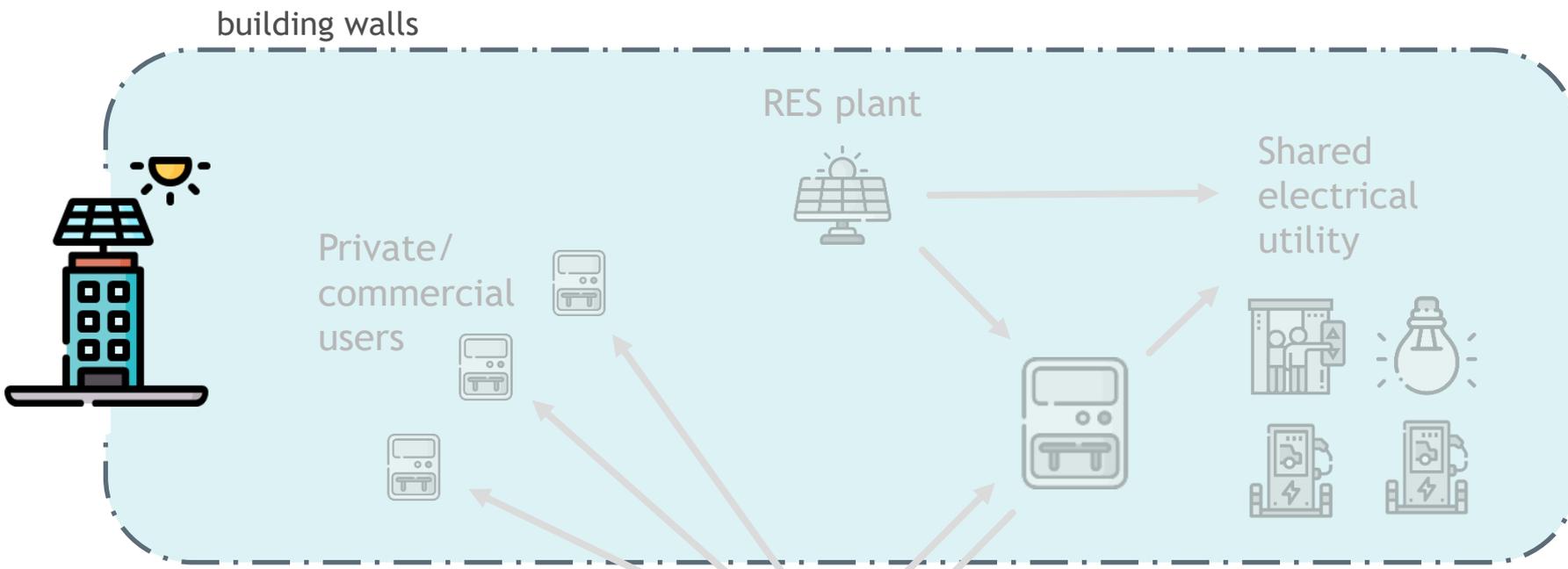
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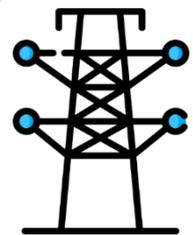




SELF CONSUMPTION GROUP



**What happens
with Collective Self
Consumption Group?**

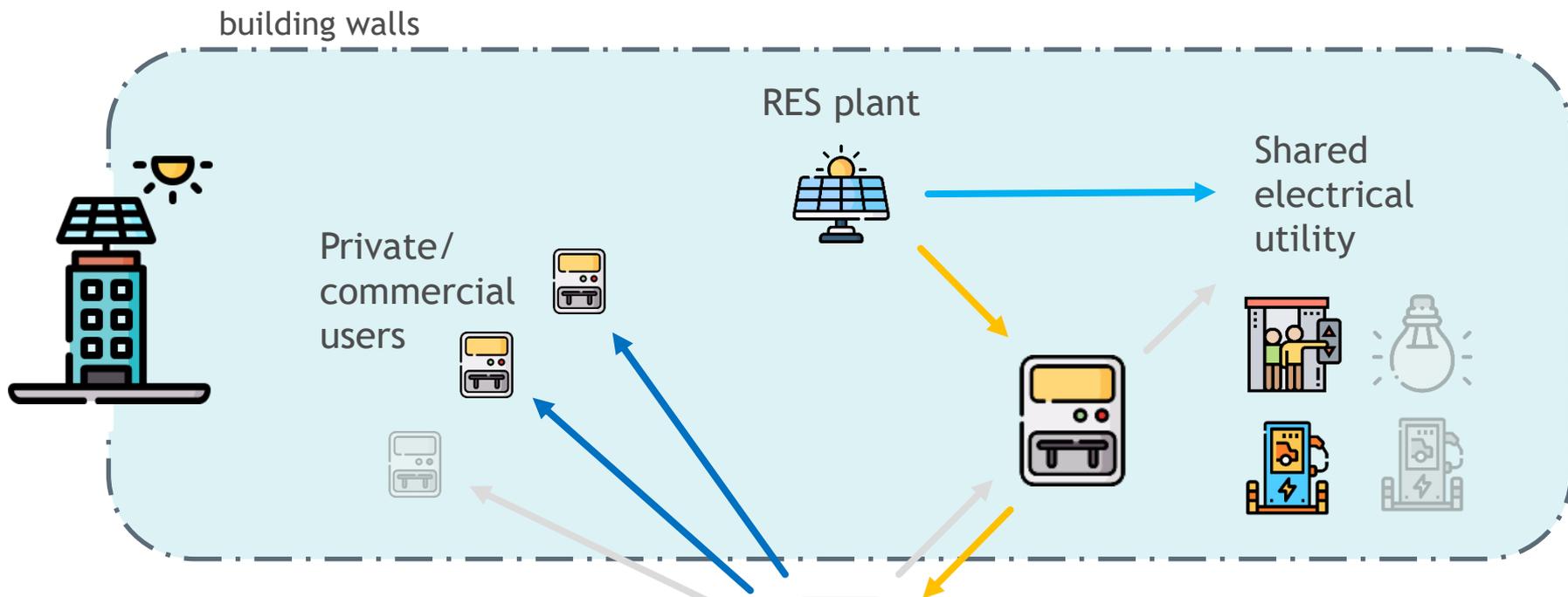


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REC | ACTORS AND ROLES

 **SELF CONSUMPTION GROUP | INCENTIVE SCHEME**



1. The energy balance (selling vs purchasing) @ hour detail is performed and generate incentives



Incentive: 0,11 €/kWh untaxed for each kWh exchanged (0,10 GSE + 0,01 ARERA)

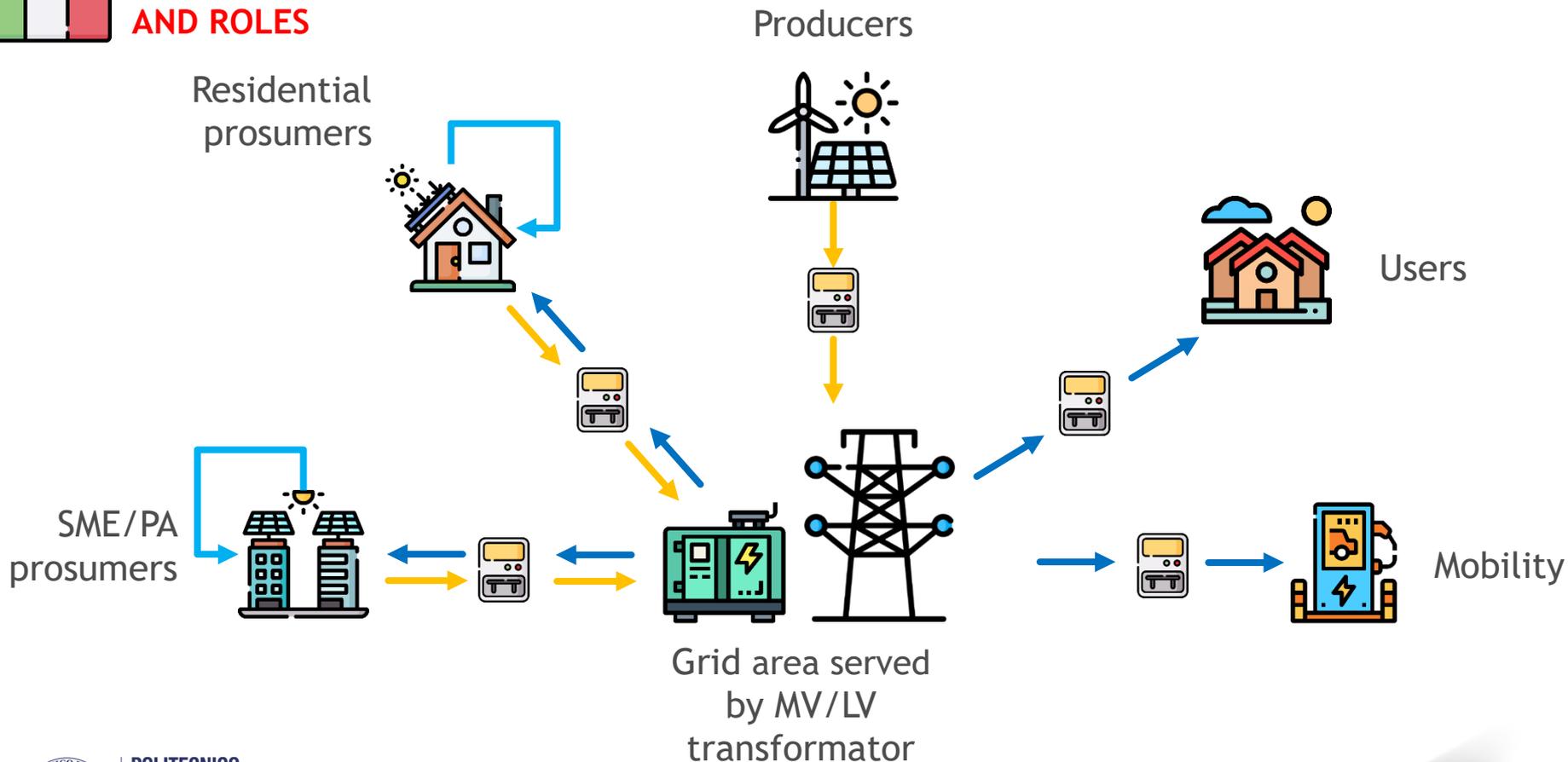


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REC | ACTORS AND ROLES



REC | ACTORS AND ROLES

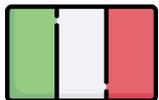


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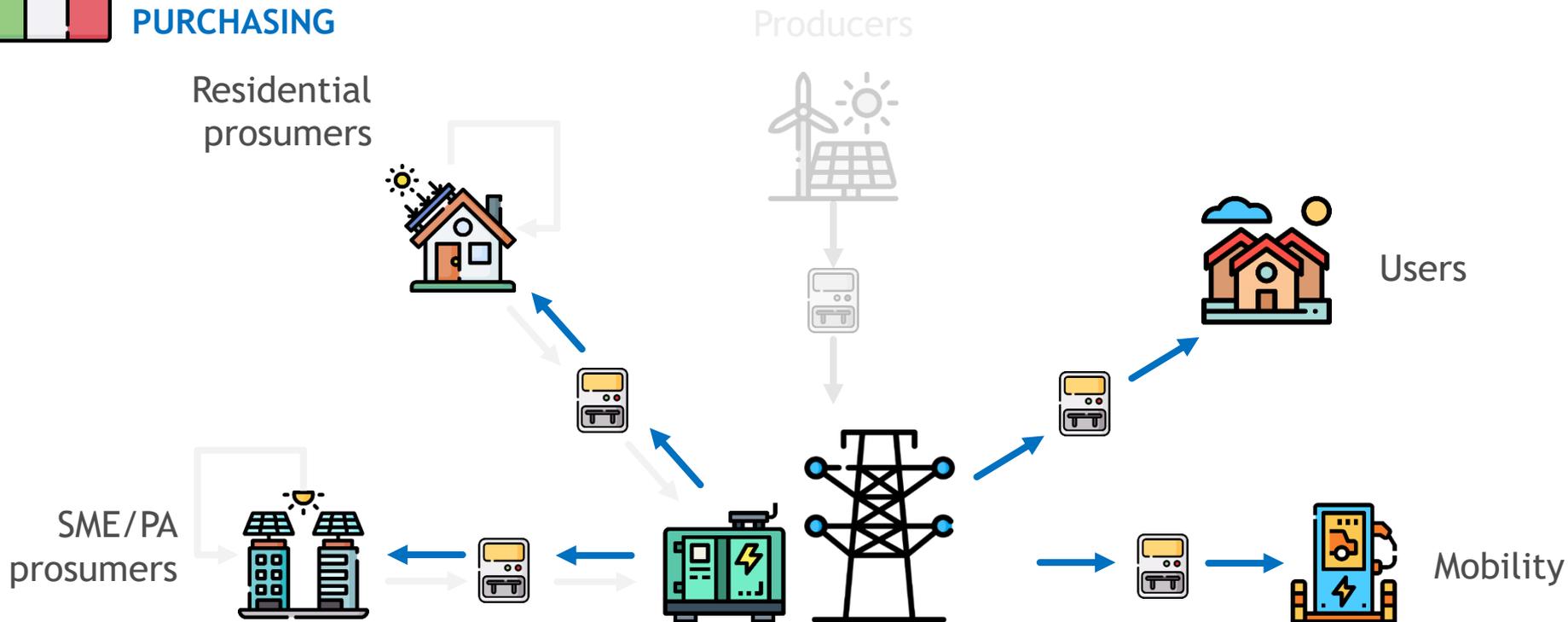
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REC | ENERGY PURCHASING



REC | ENERGY PURCHASING



**each user/prosumer purchases
electricity at market price**



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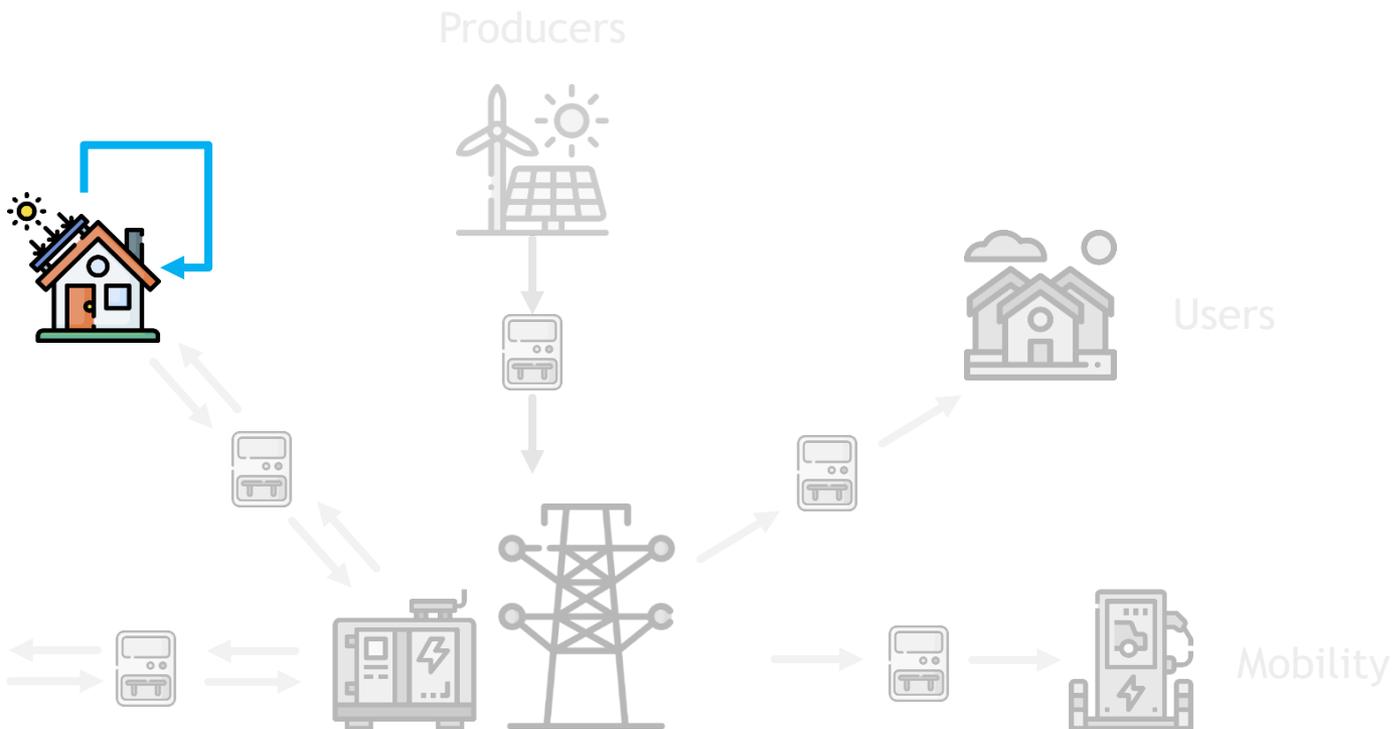


REC | SELF CONSUMPTION



REC | SELF CONSUMPTION

Residential prosumers had 50% tax deduction on plant installation cost



each prosumer saves money with self consumption ~0,15 €/kWh

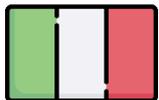


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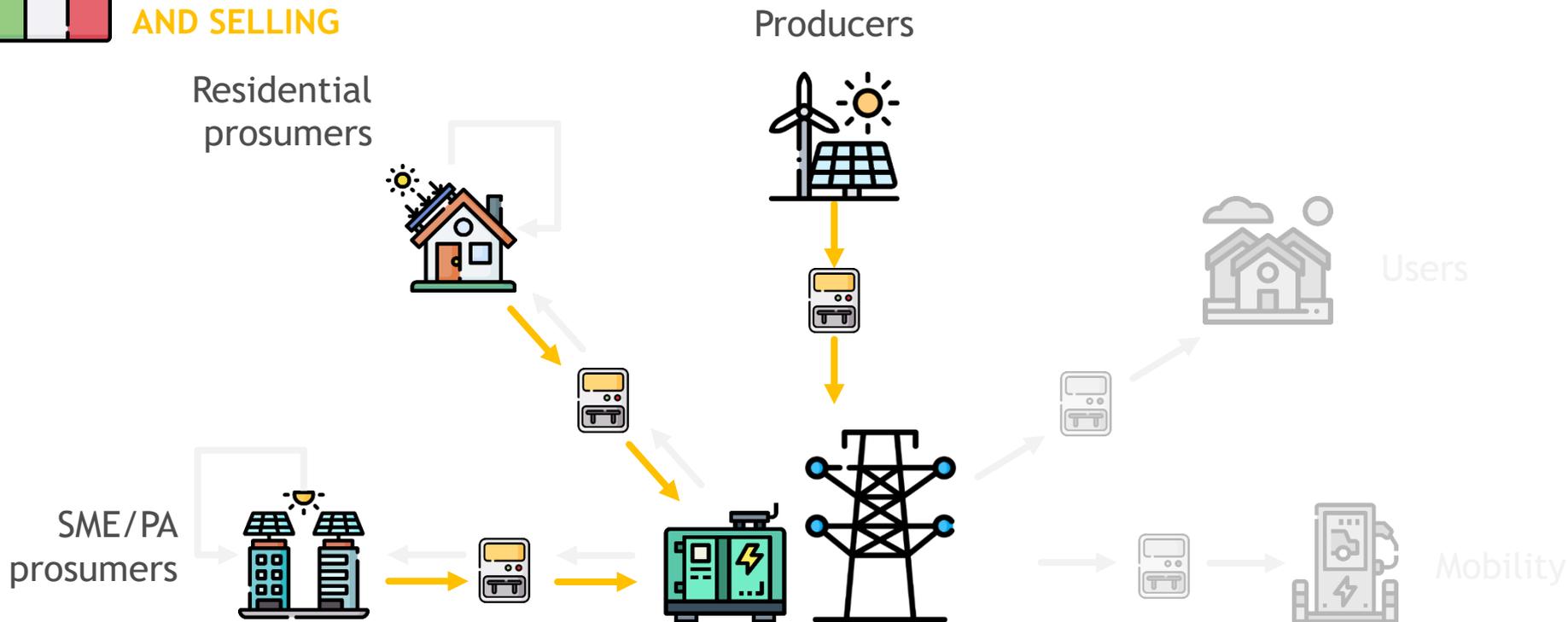
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REC | ENERGY PRODUCTION AND SELLING



REC | ENERGY PRODUCTION AND SELLING



each prosumer/producer sells
energy at market price ~0,04 €/kWh
the income are taxed

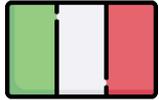


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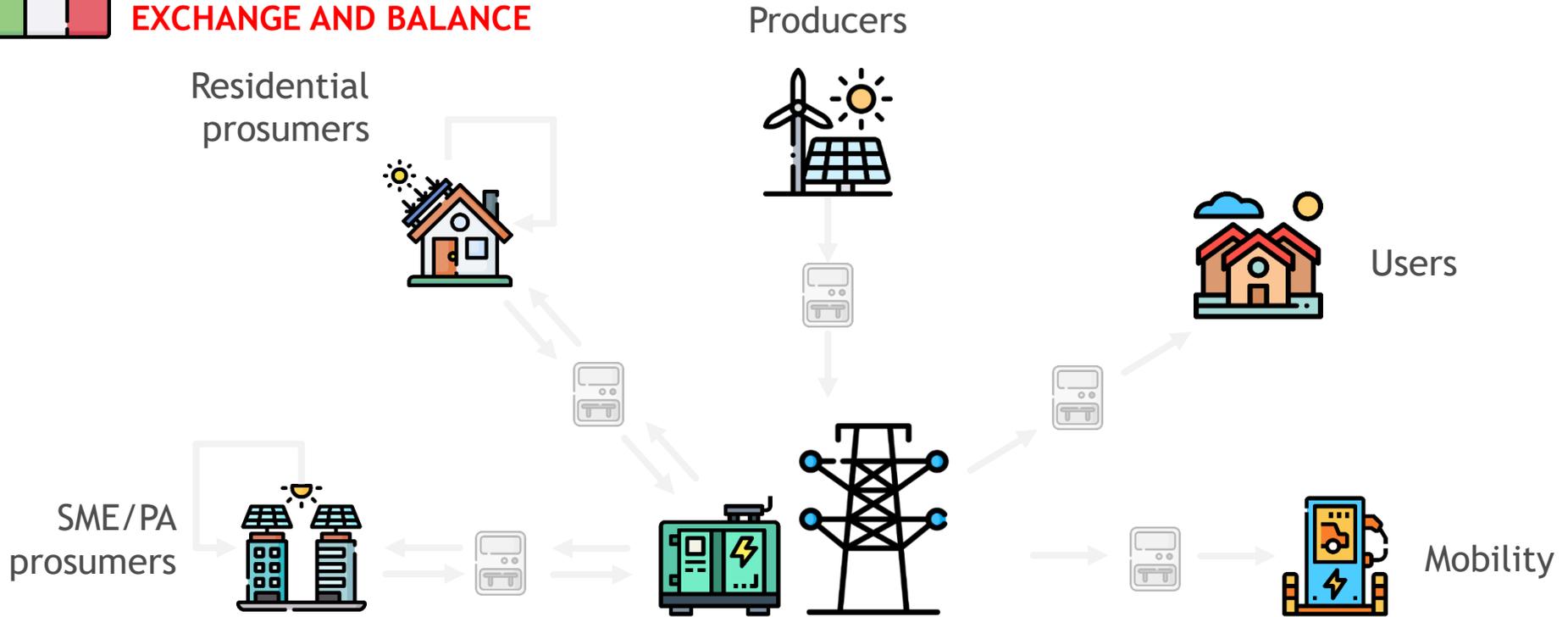
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REC | VIRTUAL ENERGY EXCHANGE AND BALANCE



REC | VIRTUAL ENERGY EXCHANGE AND BALANCE



What happens with REC?



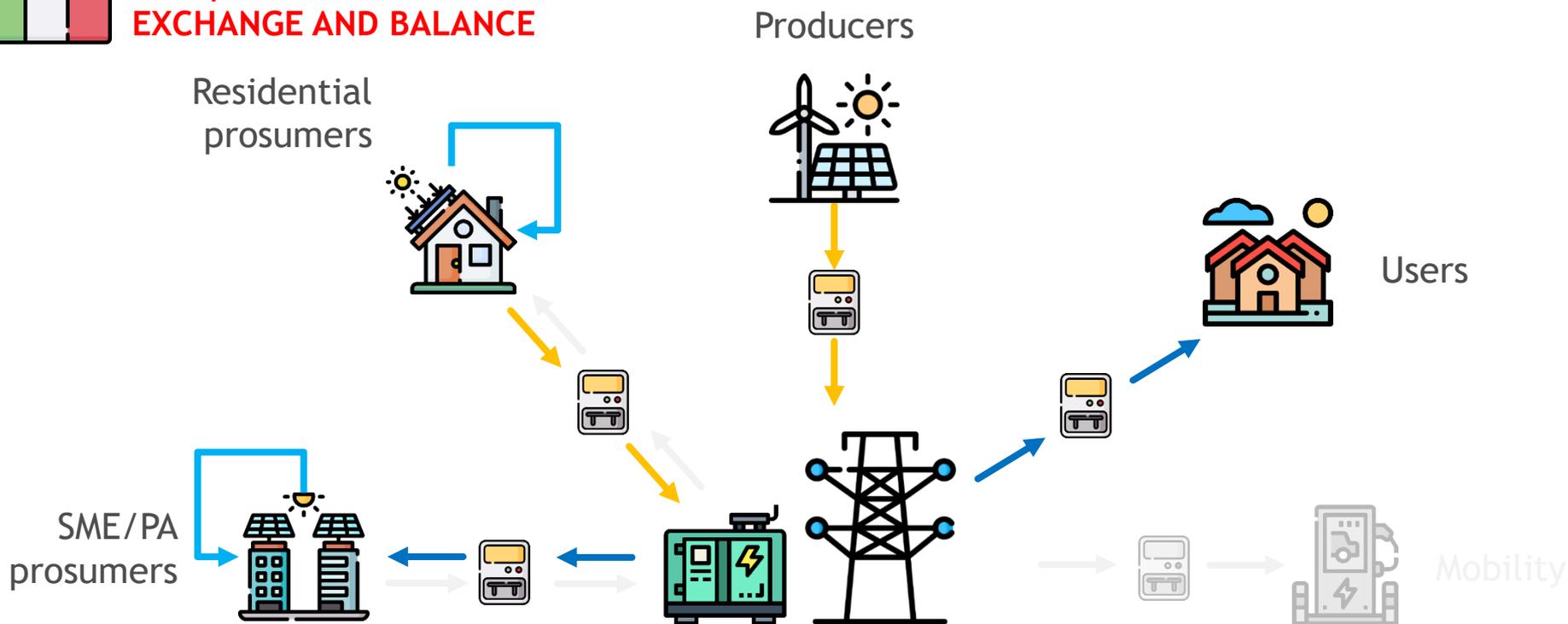
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REC | VIRTUAL ENERGY EXCHANGE AND BALANCE



REC | VIRTUAL ENERGY EXCHANGE AND BALANCE



1. All the selling income go to the REC
2. An energy balance (selling vs purchasing) @ hour detail is performed and generate incentives



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**REC incentive: 0,12 €/kWh untaxed
for each kWh exchanged
(0,11 GSE + 0,01 ARERA)**

TAKING COOPERATION FORWARD



- REC and Collective Self Consumption Groups need to **realize their self-consumption at hourly level**
 - They need to implement a **real balanced REC/CSCG system**. Critical aspect if this aspects is not governed.
 - Opportunity in creation of **new businesses** providing **services for the REC/CSCG balancing** by REC monitoring and activation of users in real time (mobility charging, heat pumps...).
- REC needs to define the methods for **incentive distribution** inside the REC between:
 - Prosumers
 - Producers
 - “Simple” users
- Evaluation of the **pros and cons compared to other RES incentive schemes** at the individual user's level (e.g. Net Metering)



THANK YOU!



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