

## SOLAR: Helping consumers and businesses control their energy costs

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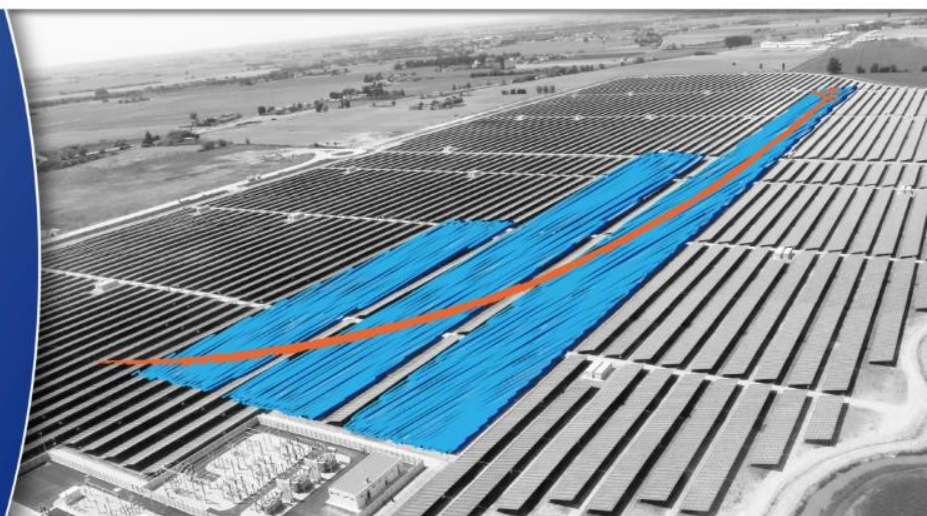


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# Direct wire PPAs in Italy Legislation and case studies

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Pionieri della sostenibilità

Implementazione di strumenti e di politiche di tutela e gestione delle risorse

AMBIENTEITALIA

- Private consultancy company in the energy and environment field
- 20 years of activity
- More than 1,500 local, national and international projects
- 30 experts and 4 offices
- Role in PV Financing: National Implementation Partner for Italy

# TOPICS

- **PPA legislation and profitability**
- **Energy cost and electricity bill structure**
- **Case studies**
- **Future outlook**

- **REMOVED!** ~~The PV plant should be installed in an area owned (or managed) by the customer~~
- Only one final user, thus excluding many market segments (commercial centres, airports, industrial parks, office buildings and multi-family houses)
- Except for common loads

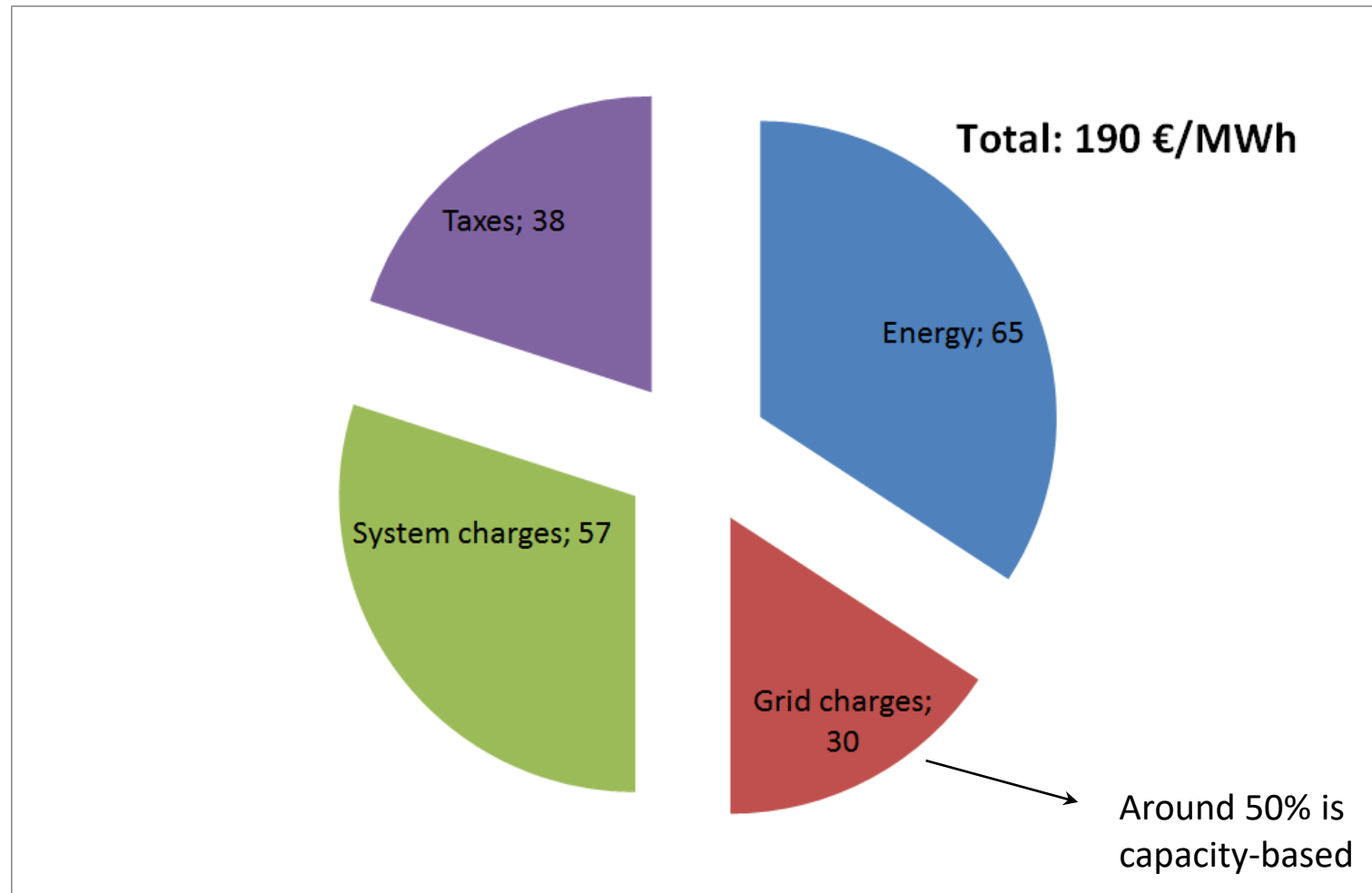
# PPA PROFITABILITY

- Wholesale price is low (around 45 €/MWh)
- So self-consumption rate is a key profitability parameter
- Which sectors then?
  - Industrial
  - Commercial
  - Office buildings
  - Public buildings: Lower consumption and smaller size but reliable consumers

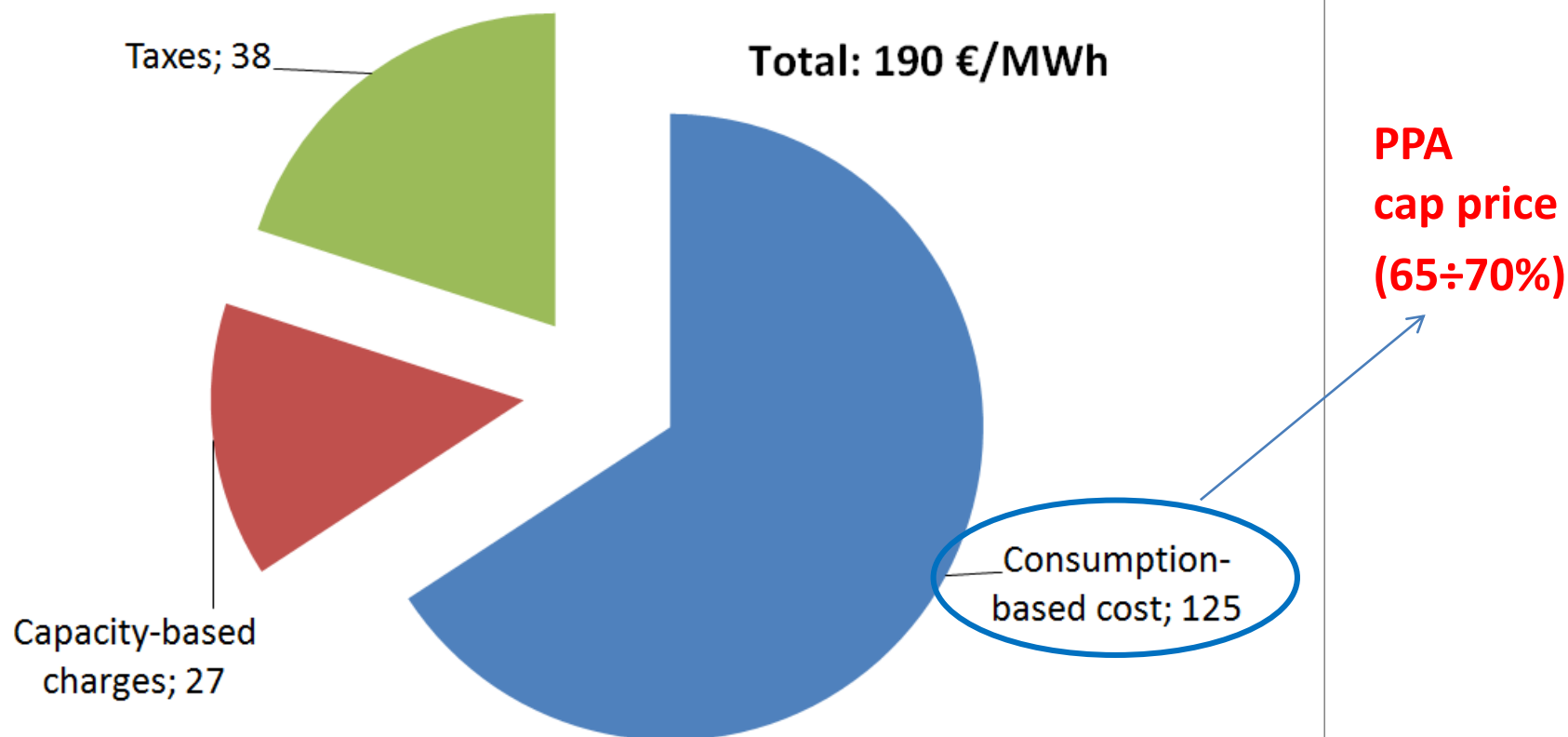
# GRID ELECTRICITY COST

- For enterprises in 2016 (source: ENEA)
- Without taxes
- 20÷500 MWh/year: 180 €/MWh
- Up to 2,000 MWh/year: 164 €/MWh
- Up to 20,000 MWh/year: 145 €/MWh

# ELECTRICITY BILL STRUCTURE



# ELECTRICITY BILL SELF-CONSUMPTION SAVINGS





# L'OREAL INDUSTRIAL PLANT

- 3 MW<sub>p</sub> PV plant
- Total yield: 3,600 MWh/year
- Specific yield: 1,200 kWh/year per kW<sub>p</sub>
- Self-consumption rate: 100%
- PV output: 30% of the total demand



Source: Qualenergia.it

# L'OREAL INDUSTRIAL PLANT

- Investment: 3,000,000 €  
(about 1,000 €/kW<sub>p</sub>)
- Balance sheet finance, no debt financing
- 20 years contract, including a “take or pay” provision
- 10% savings with respect to grid price
- Investor also broker for the additional energy demand of the factory



Source: Enersol

# ARESE SHOPPING CENTRE

- 50% of the common loads covered by PV (1.4 MW<sub>p</sub>)
- Lighting and space cooling through heat pumps
- Also 2 cogeneration units





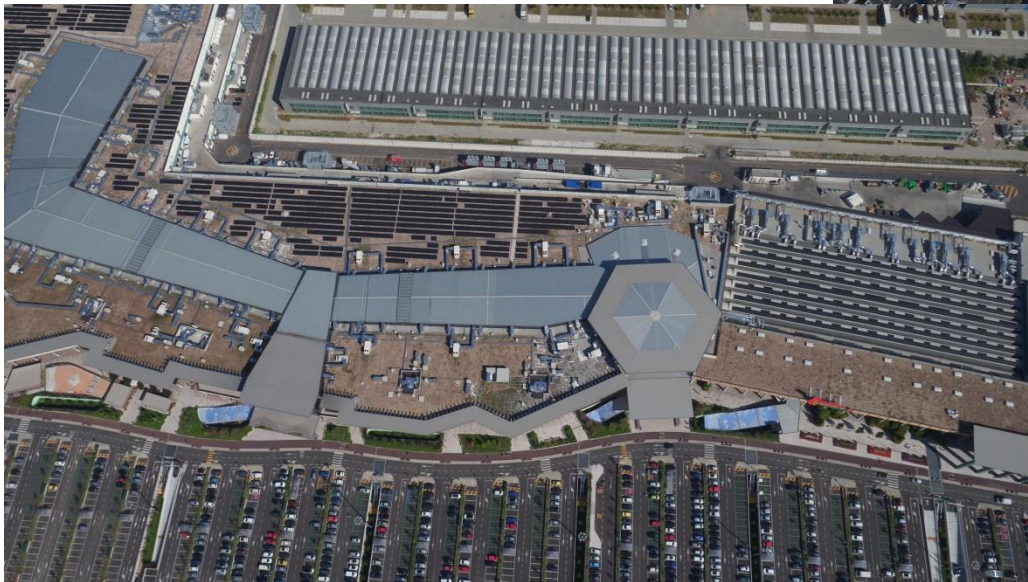
# ARESE SHOPPING CENTRE

- Expected yield: 1,500 MWh/year
- Self-consumption rate: almost 100%



Source: Solar Frontier Europe

# ARESE SHOPPING CENTRE





# OUTLOOK

## ELECTRICITY MARKET

- Reform of the electricity market is under consultation
- Expected (declared...) deadlines:
  - Published May/June 2017
  - Into force January 2018
- PV plants (with storage) could get revenues from additional grid services (management of energy flows, frequency, voltage, etc.)

# OUTLOOK

## NON-RESIDENTIAL BILL

- Non-residential customers: Industrial, tertiary, agriculture
  - 75% of the national consumption
  - Reform currently under consultation
  - Jan 2018...?
- 
- System charges increase their capacity-based share...But how much?
  - 5 scenarios: 10÷50% moved to the capacity-based share
  - 3 of them drastically negative for PV (estimated cut of 4.5 billion investments until 2030)
  - The Energy Authority is oriented towards the 2 'positive' ones (estimated market decrease: 7÷12%)
  - Capacity-based share of system charges could be 10÷30%
  - Of course it is retroactive...

# OUTLOOK

## MULTIPLE USERS

- ‘Closed distribution systems’ (SDC): Private grids with multiple consumers
- They may be unlocked before the transposition of the EC ‘Winter Package’
- Petition (about 25,000 signatures) to the Prime Minister for amending the ‘Competition Law’ and including this topic
- View of the Regulatory Authority: SDCs should not be used for promoting renewables and efficiency (this should be done through incentives) but only when it is cheaper than the connection to the public grid
- In conflict with the EC ‘Winter Package’
- Positive opinion by the Authority for Competition and Market



# CONCLUSIONS

- PPA is a promising business model in Italy
- Especially in specific application segments (public buildings, large industrial or commercial plants)
- Main risks are:
  - Stability of user consumption (low wholesale price)
  - Lower value of electricity savings with the new electricity bill
- Possible ‘compensations’:
  - Additional revenues from grid services
  - Multiple consumers reducing risk and unlocking new market segments

# Thank you for your attention!

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