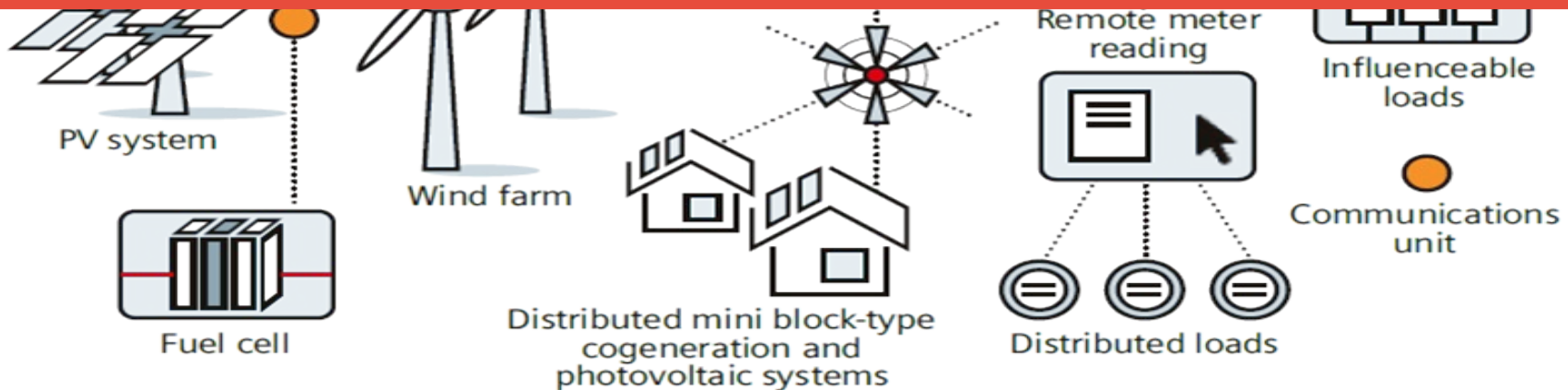


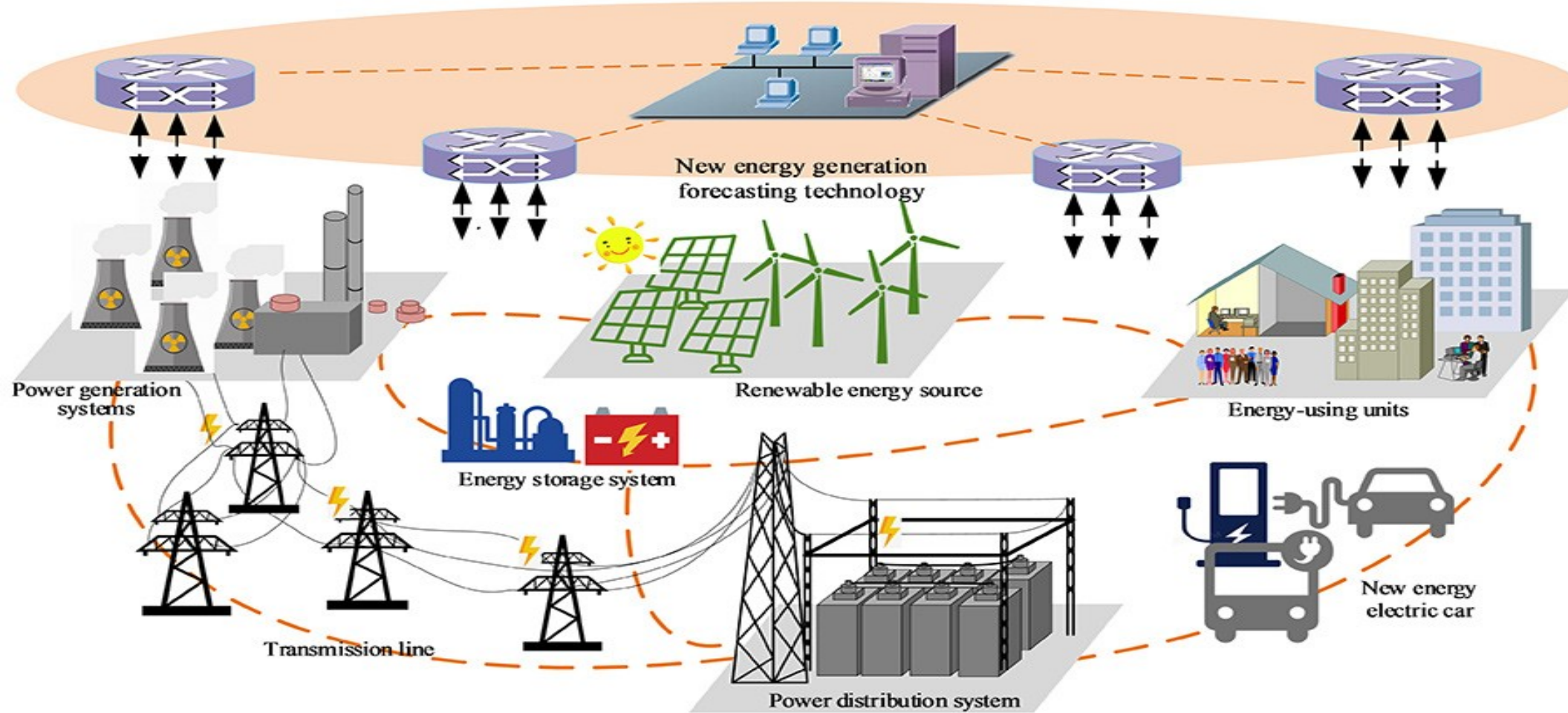


## WHO IS SMART?

**Smart metering and billing system for prosumer microgrids with new-type multi-source energy meters**



# I. WHO IS SMART?



# BENEFITS OF SMART GRIDS

**Balancing and stabilizing the overall operation of energy sources, transmission and distribution systems.**

**Achieved by:**

- forecasting energy consumption and adjusting energy production
- flattening the energy consumption profiles in consumer buildings
- shifting peaks in energy consumption



**Influencing end-users**

## SO WHO IS SMART?

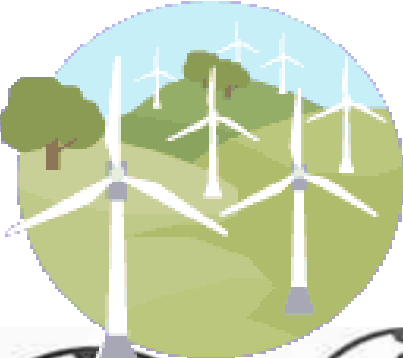
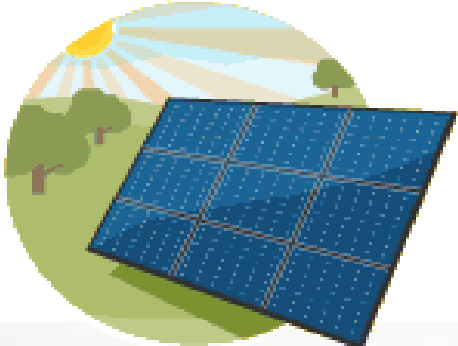
End-users support the operation of the grid,  
but it is the grid that should support the end-users.

The grid is smart, not the end-user

To improve this, we need:

- user-oriented metering & billing system
- more direct benefits for end-users
- motivation for end-users to invest in new, high-efficiency energy systems

# II. MULTI-SOURCE ENERGY METERS



**KILOWATTHOURS**

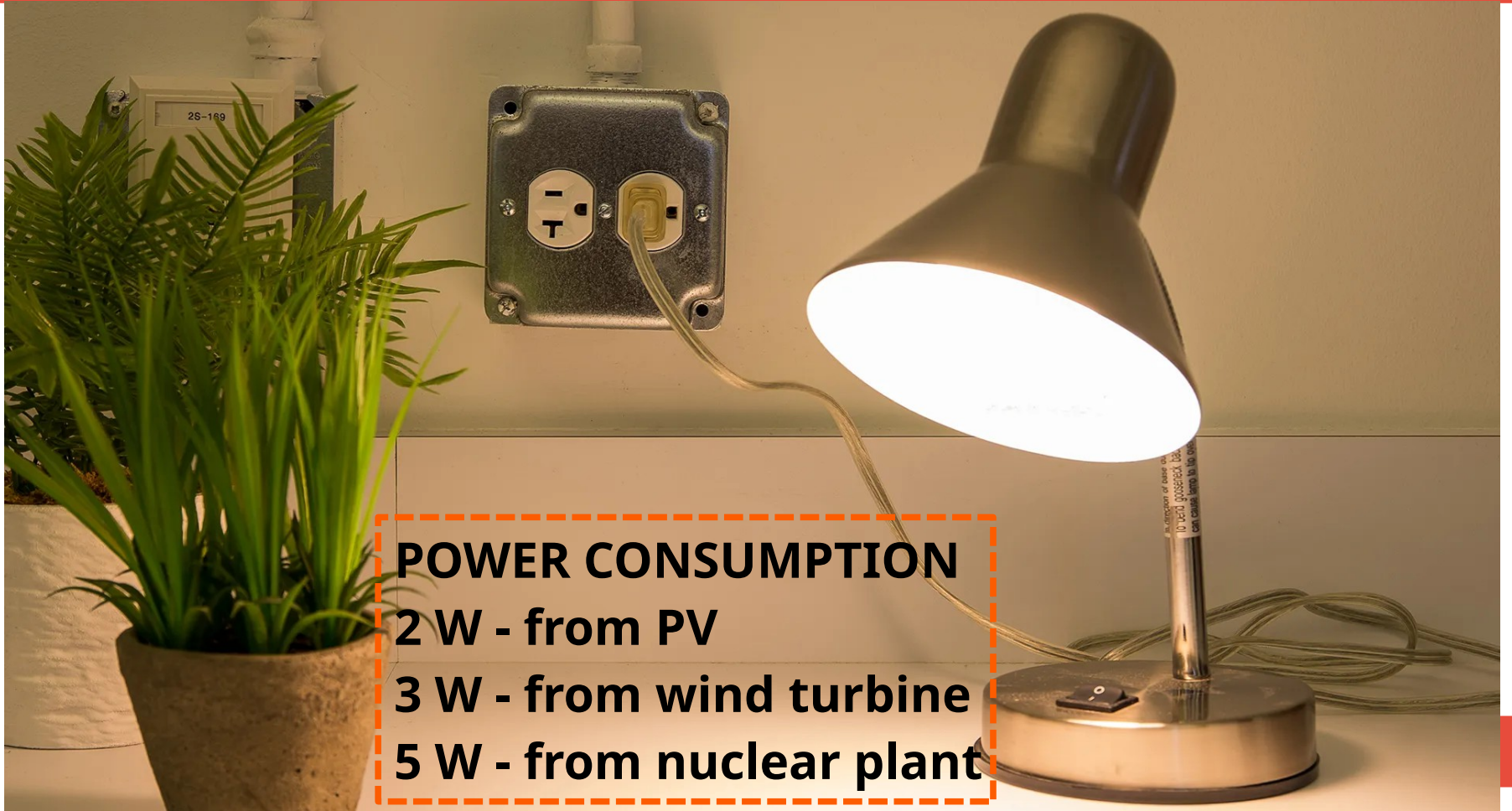


# TOTAL POWER CONSUMPTION



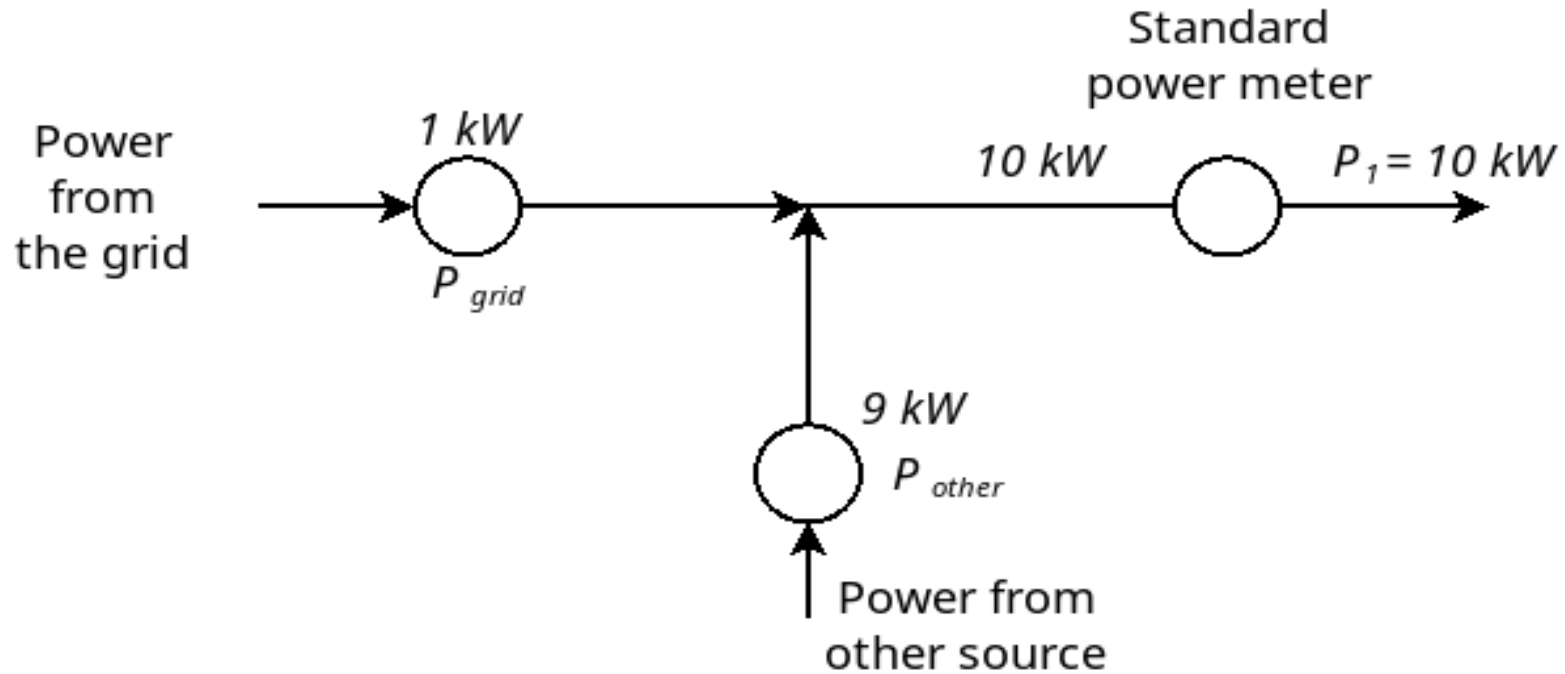
**POWER CONSUMPTION**  
**10 W - total**

# SOURCE-ATTRIBUTED POWER CONSUMPTION



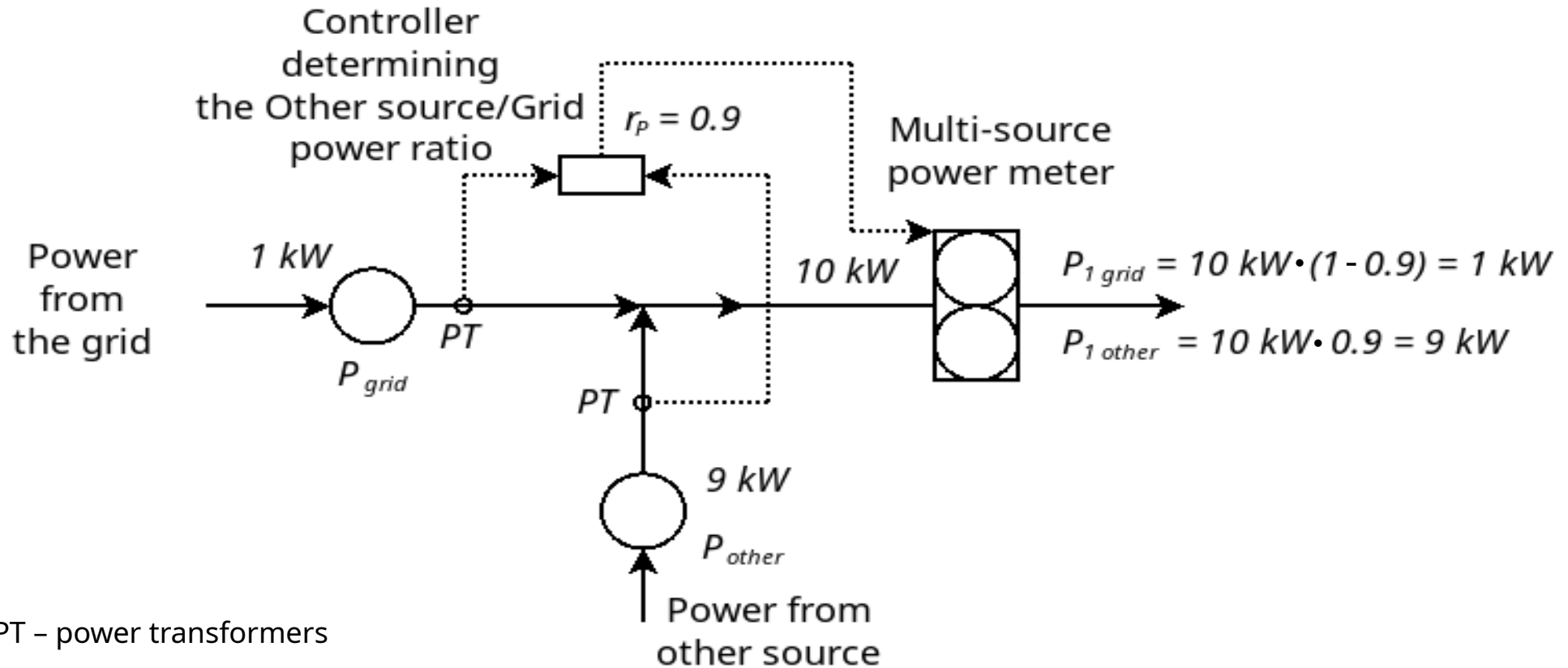
**POWER CONSUMPTION**  
**2 W - from PV**  
**3 W - from wind turbine**  
**5 W - from nuclear plant**

# STANDARD ENERGY METERS





# MULTI-SOURCE ENERGY METERS



PT - power transformers

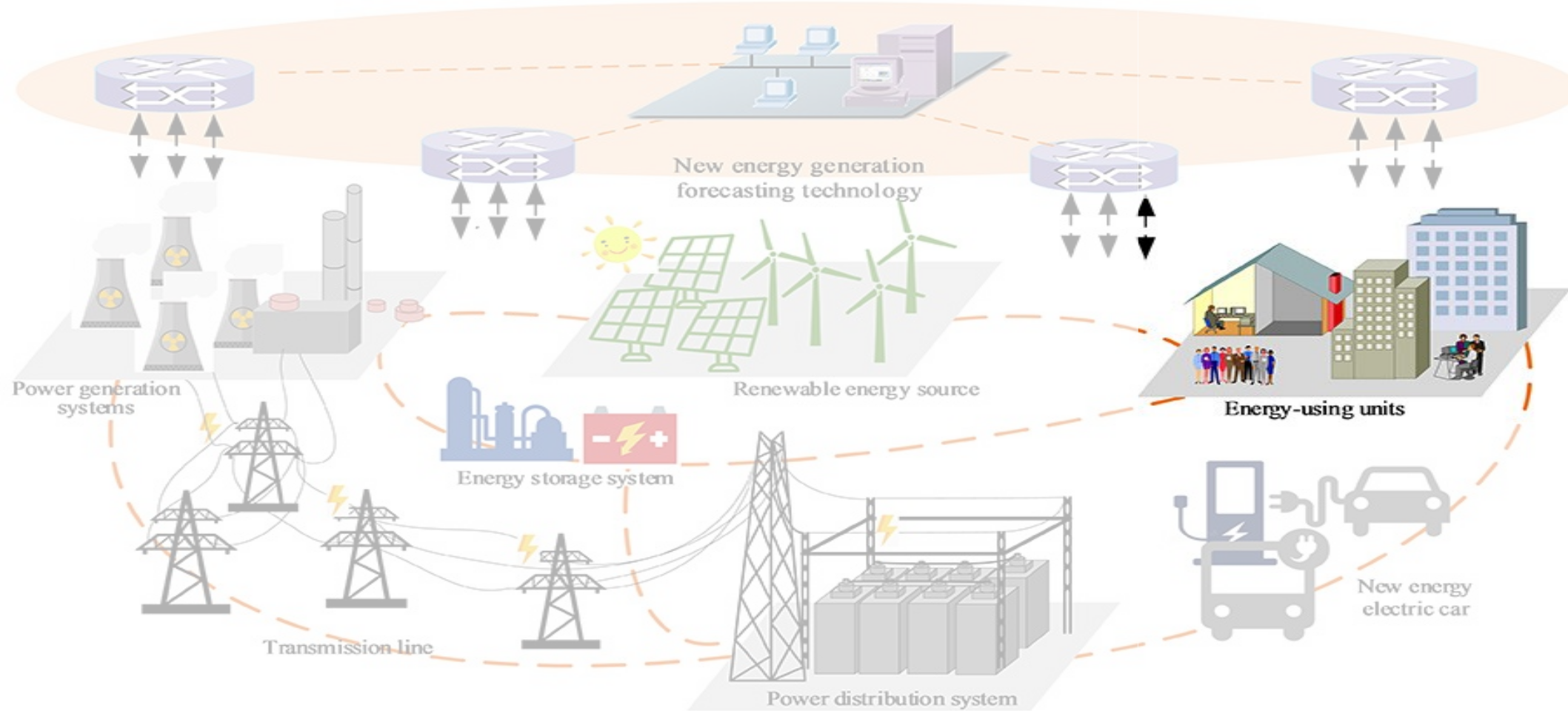
## **BENEFITS FOR END-USERS**

**We can determine not only the total amount of energy consumed but also the amount of energy used from each source separately.**

**This is particularly important for defining contracts and billing systems for end-users.**

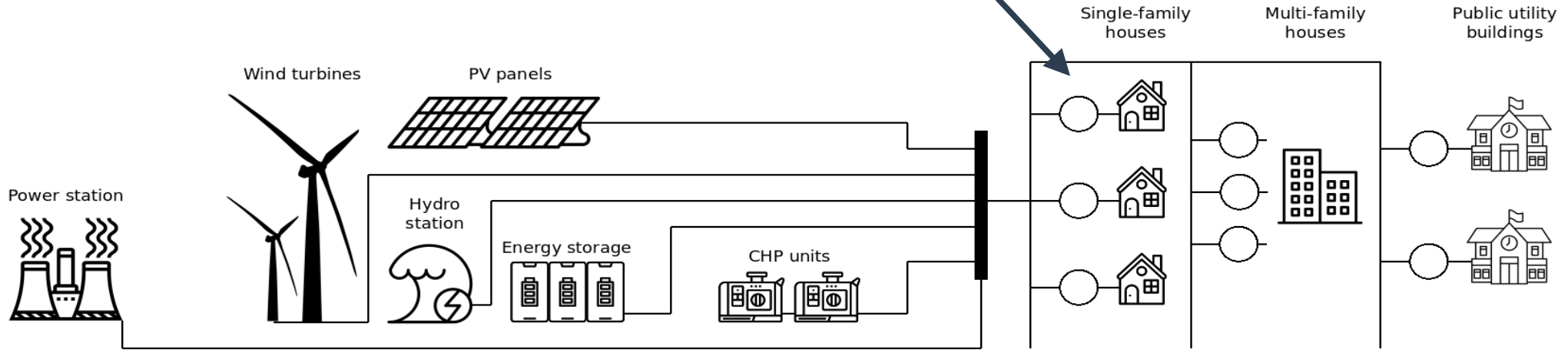
**Users can also be informed about which sources are currently supplying energy and in what share (and price), which may increase the conscious use of energy.**

### III. USER-ORIENTED MICROGRID



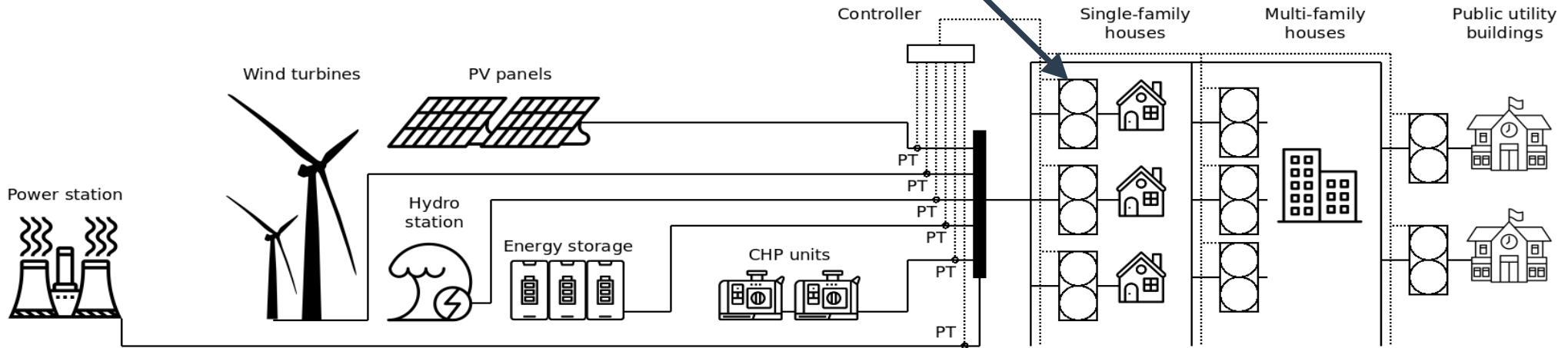
# TRADITIONAL MICROGRID

## WITH STANDARD ENERGY METERS



# USER-ORIENTED MICROGRID

## WITH MULTI-SOURCE ENERGY METERS



DETAILS: SEGE 2024 PROCEEDINGS





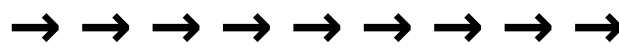
## **USER-ORIENTED MICROGRID**

End-users can benefit more direct profits from being a part of the microgrid / smart grid.

End-users can be more motivated to invest in new, high-efficiency energy solutions.

It can create social support and demand for microgrids / smart grids.

Contact



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## WHO IS SMART?

Smart metering and billing system for prosumer microgrids with new-type multi-source energy meters

