



UIUC Capstone

Fundamentals of Energy Markets

The energy markets players

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Energy Market Management

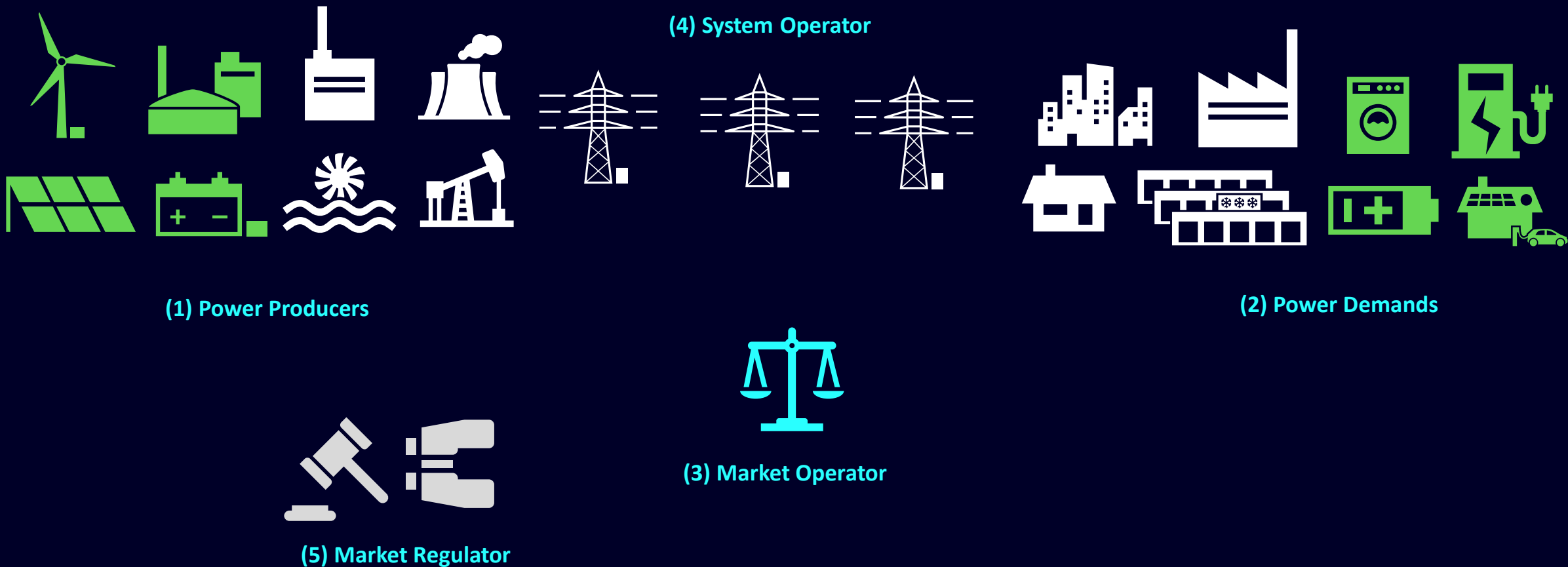
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The fundamental objectives of power system operations are the efficient and reliable supply of electricity.

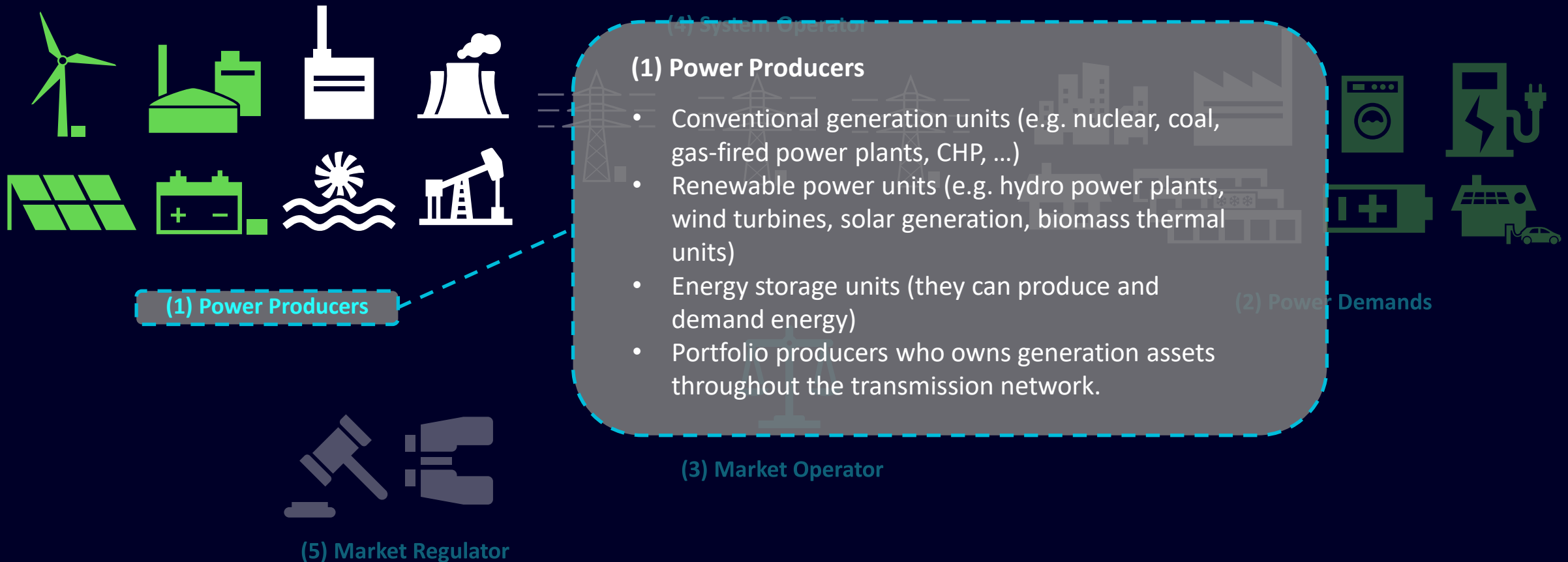
Basic Concepts from Energy Markets

Market Participants



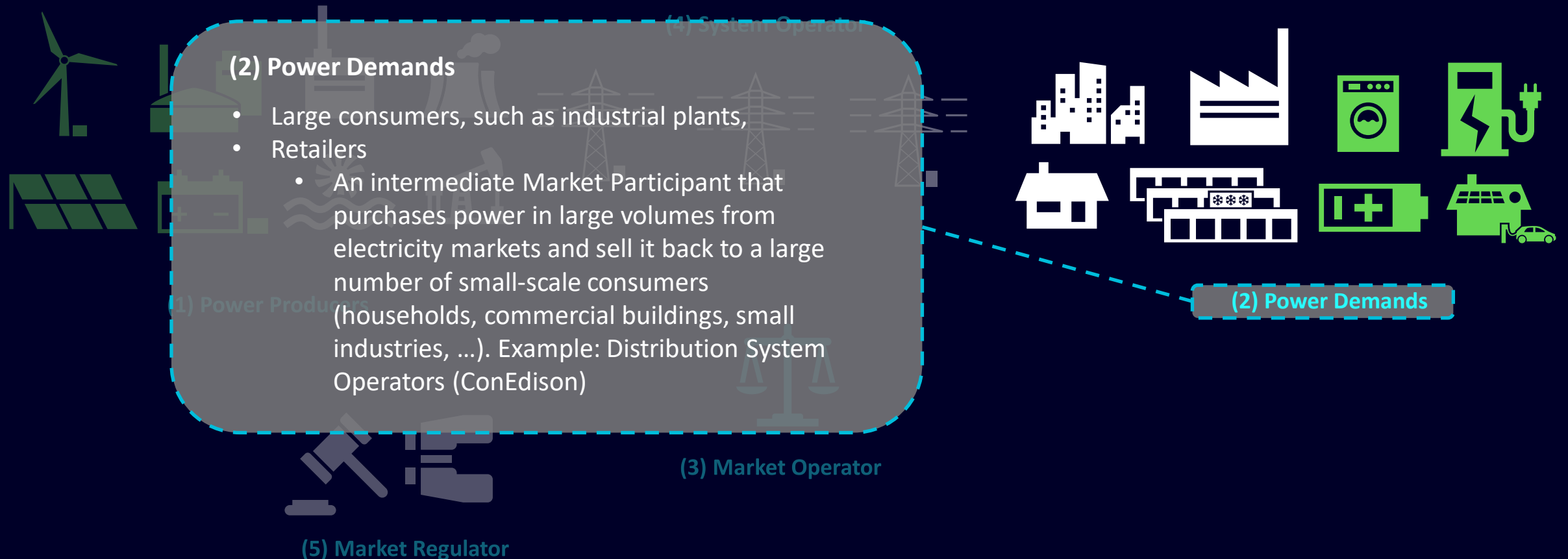
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Market Participants



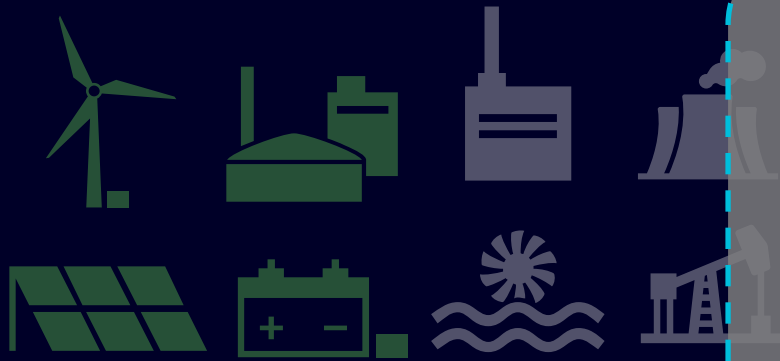
Basic Concepts from Energy Markets

Market Participants



Basic Concepts from Energy Markets

Market Participants



(1) Power Producers

(3) Market Operator

- A non-profit entity, who receives all offers from producers and bids from demands and clears the market (by maximizing the social welfare), and eventually disseminates market-clearing outcomes, i.e., prices and quantities.
- Ex: CAISO, NYISO, EPEX SPOT, Nord Pool, CCEE

(4) System Operator



(2) Power Demands



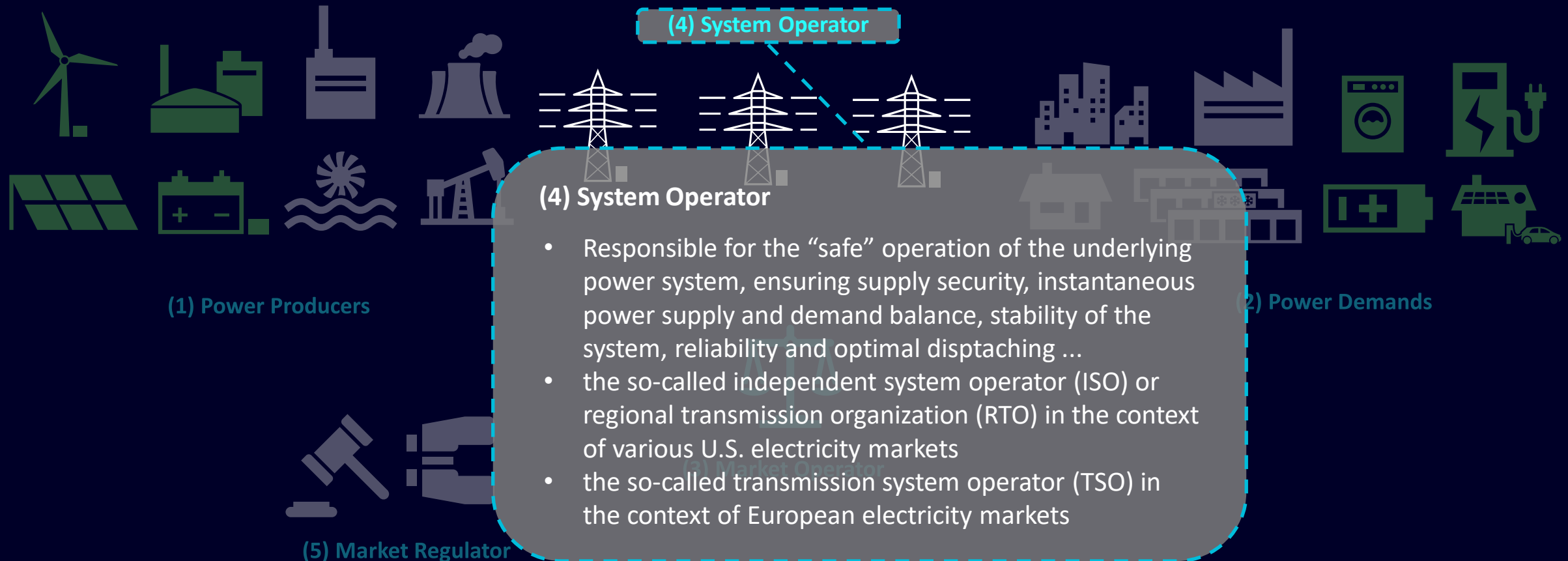
(5) Market Regulator



(3) Market Operator

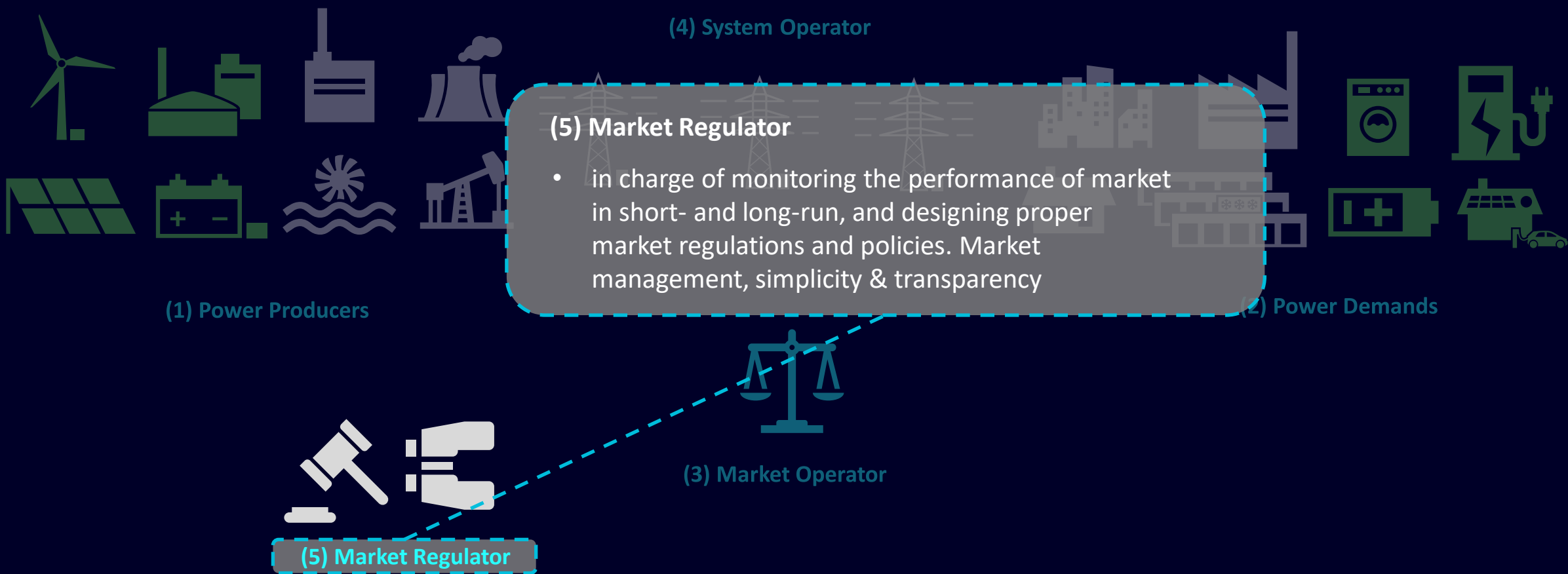
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Market Participants



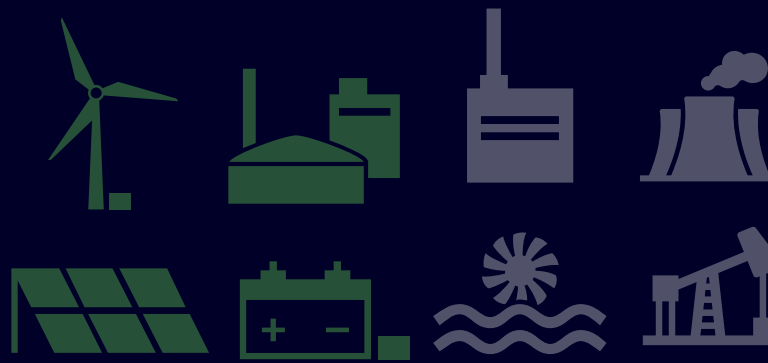
Basic Concepts from Energy Markets

Market Participants



Basic Concepts from Energy Markets

Market Participants



(1) Power Producers

(6) Other Participants

- Distribution System Operators (DSOs): responsible for the “safe” operation of the underlying mid-voltage and low-voltage distribution grids.
- Other aggregator levels: balancing area authorities, scheduling coordinators, flexibility aggregators, ...
- Energy traders: intermediate companies that use production, demand, and price forecasting to optimize the revenue created from energy production.



(2) Power Demands



(5) Market Regulator

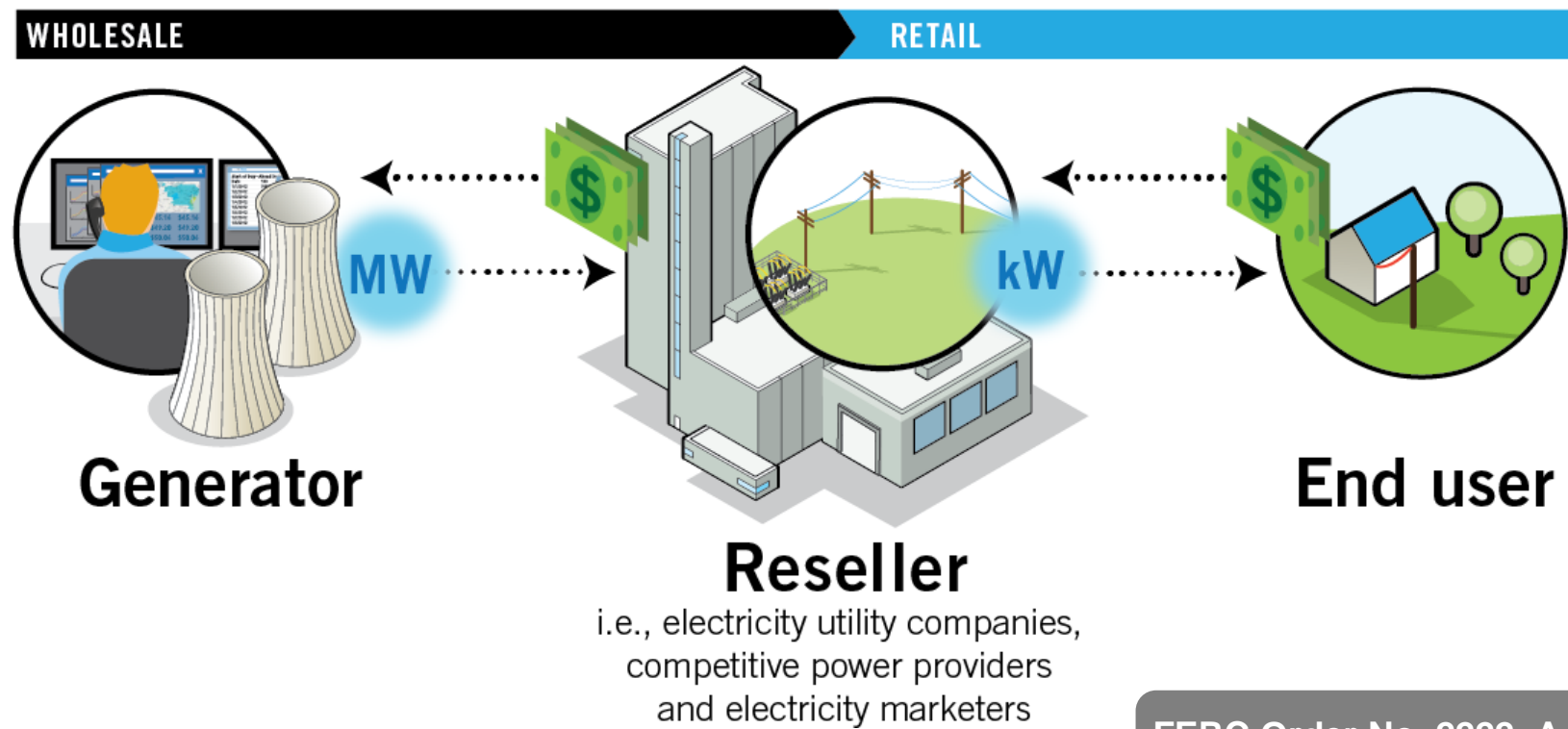
(3) Market Operator



(6) Other Participants

Basic Concepts from Energy Markets

Market Participants



Reseller

i.e., electricity utility companies,
competitive power providers
and electricity marketers

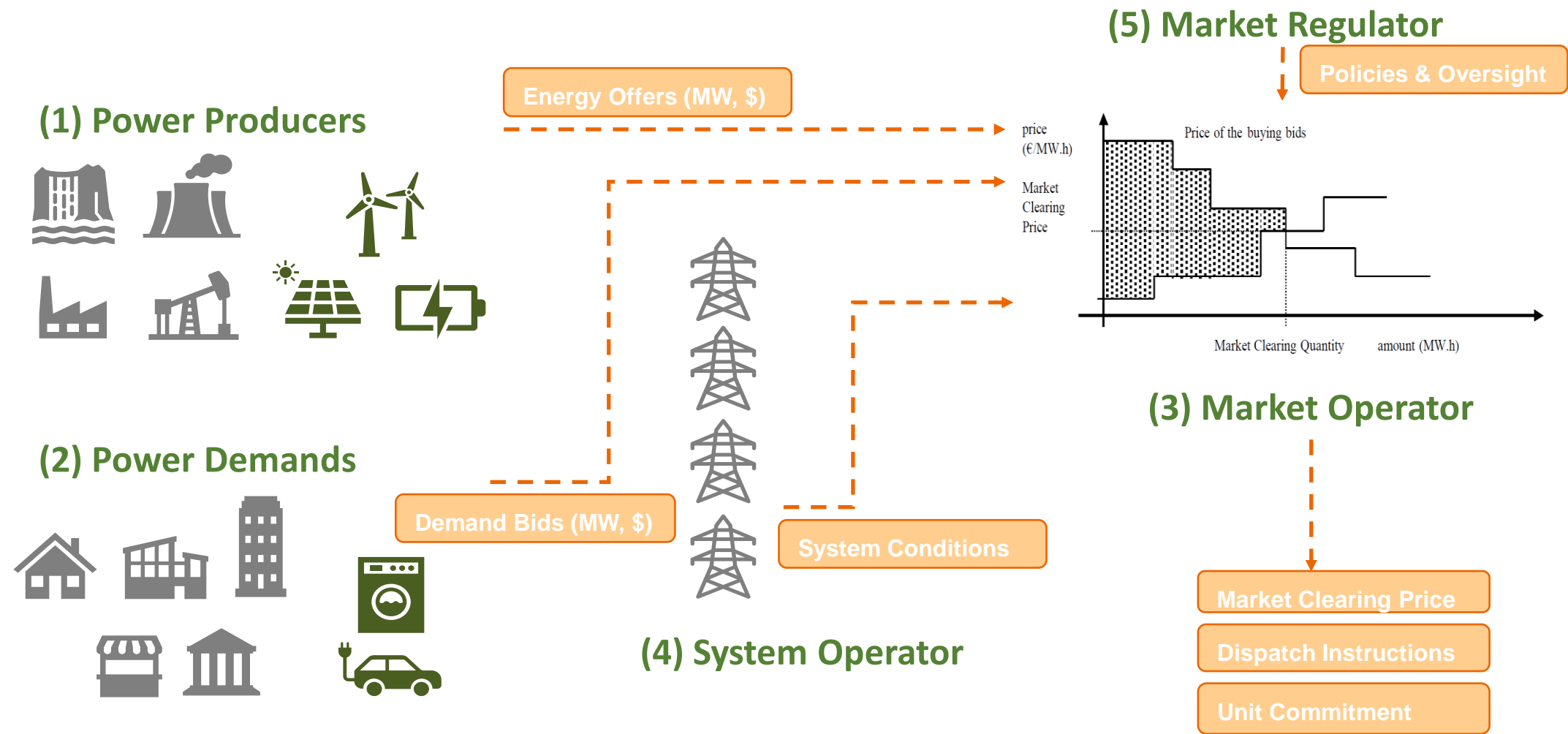
[Source: FERC 2022](#)

FERC Order No. 2222: A New Day for Distributed Energy Resources

Novo Marco Legal da Geração Distribuída

Basic Concepts from Energy Markets

The role of resources optimization





Cool Places to Look:



<https://www.ferc.gov/>



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Thank You

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