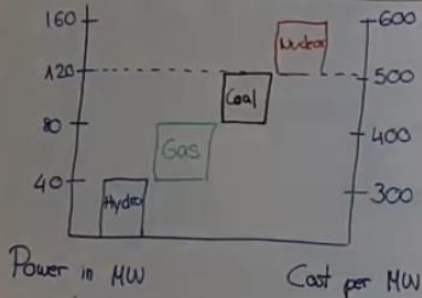
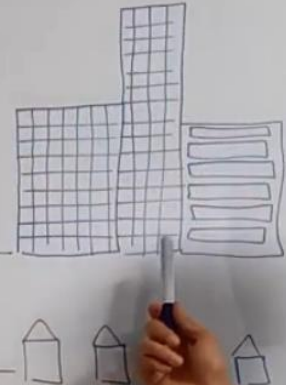


## HOW FUNCTIONS THE ELECTRIC MARKETS

- 1) Capacity market
- 2) Day-ahead market
- 3) Intraday market
- 4) Frequency 1st control
- 5) Frequency 2nd control
- 6) Frequency 3rd control

? ? ?

ALGERIA 2030 Need for 120 MW of Power  
↑  
max



$$\text{Hydro} = 40 \times 500 = 20'000 \quad 40 \times 300 = 12'000 \quad \left. \vphantom{40 \times 500} \right\} + 8'000$$

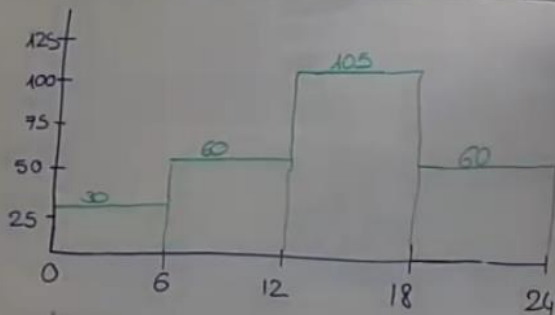
$$\text{Gas} = 40 \times 500 = 20'000 \quad 40 \times 400 = 16'000 \quad \left. \vphantom{40 \times 500} \right\} + 4'000$$

$$\text{Coal} = 40 \times 500 = 20'000 \quad 40 \times 300 = 20'000 \quad \left. \vphantom{40 \times 500} \right\} 0$$

## HOW FUNCTIONS THE ELECTRIC MARKETS

- 1) Capacity market ✓
- 2) Day-ahead market
- 3) Intraday market
- 4) Frequency 1st control
- 5) Frequency 2nd control
- 6) Frequency 3rd control

ALGERIA 2030 Need for 120 MW of Power  
↑  
max



$$\begin{aligned} 30 \times 6 &= 180 \\ 60 \times 6 &= 360 \\ 105 \times 6 &= 630 \\ 60 \times 6 &= 360 \\ \hline &1'530 \text{ MWh} \end{aligned}$$

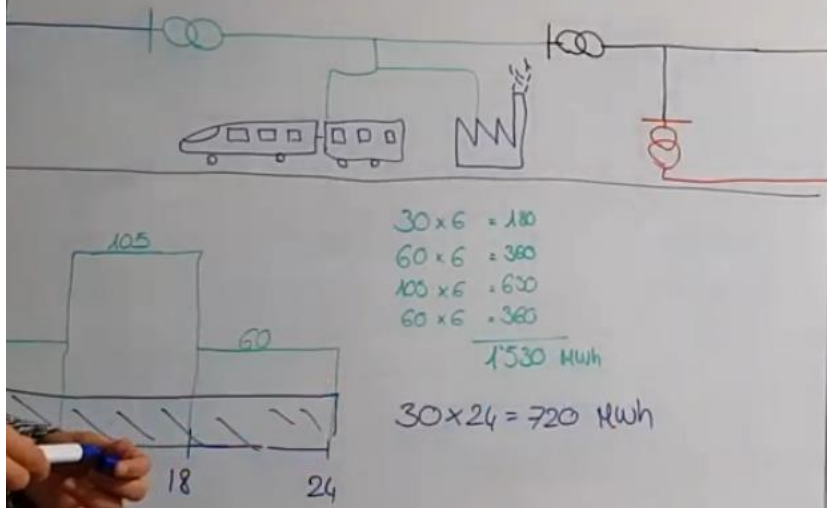
Day-ahead market is trading for energy in 1-day interval

## FUNCTIONS THE ELECTRIC MARKETS

- market ✓ 2) Day-Ahead market 3) Intraday market  
control 5) Frequency 2nd control 6) Frequency 3rd control

ALGERIA 2030

Need for 120 MW of Power  
↑  
max

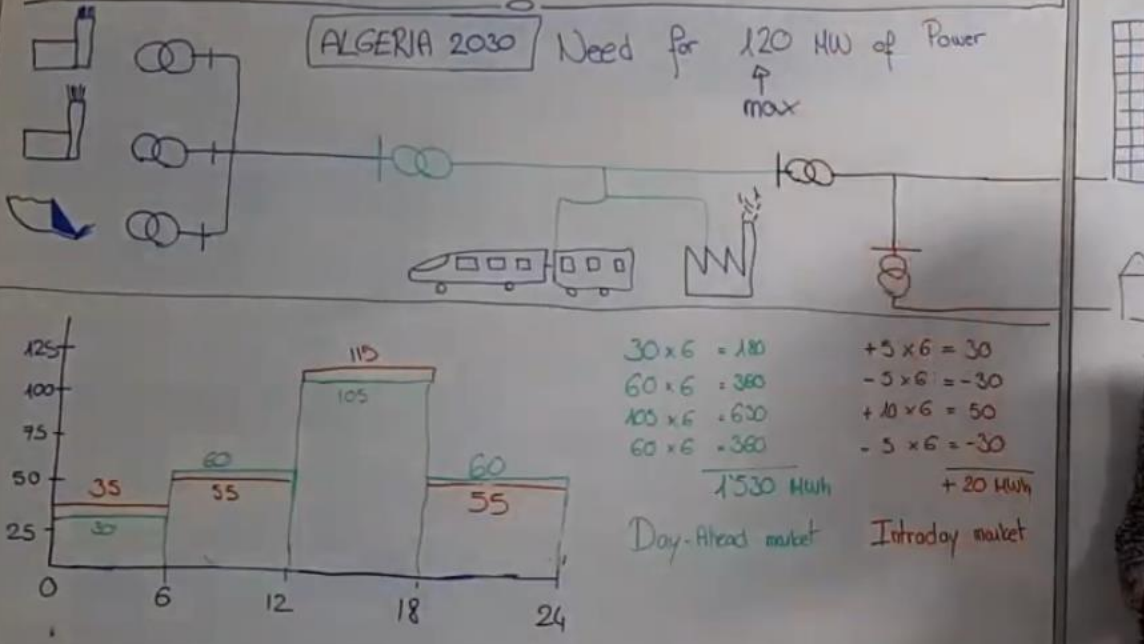


## HOW FUNCTIONS THE ELECTRIC MARKETS

- 1) Capacity market ✓ 2) Day-Ahead market ✓ 3) Intraday market  
4) Frequency 1st control 5) Frequency 2nd control 6) Frequency 3rd control

ALGERIA 2030

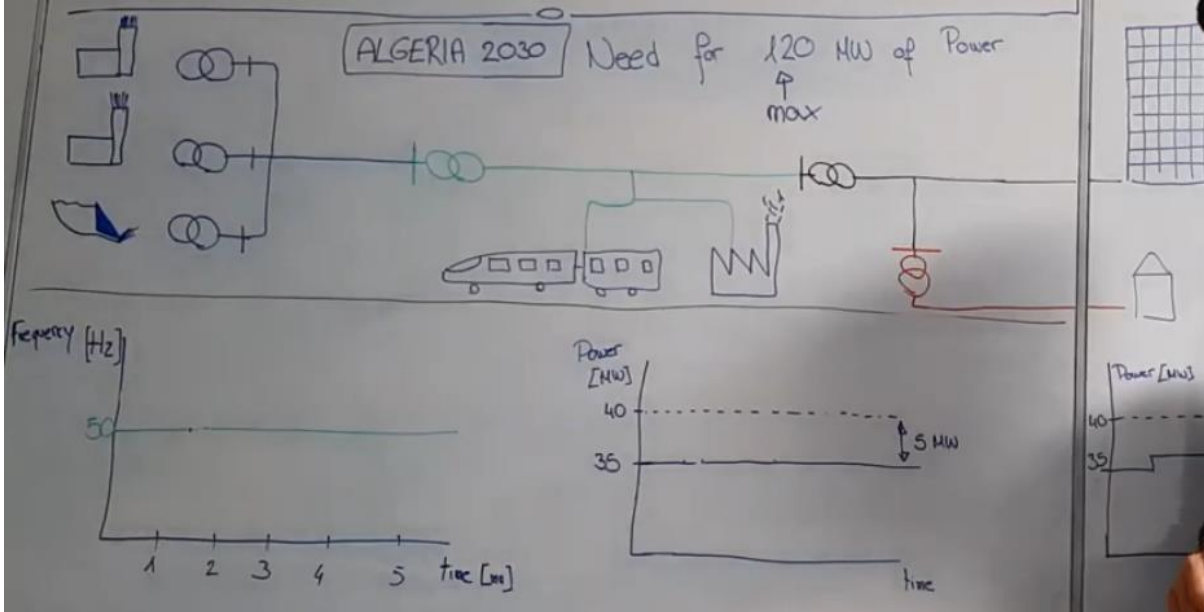
Need for 120 MW of Power  
↑  
max



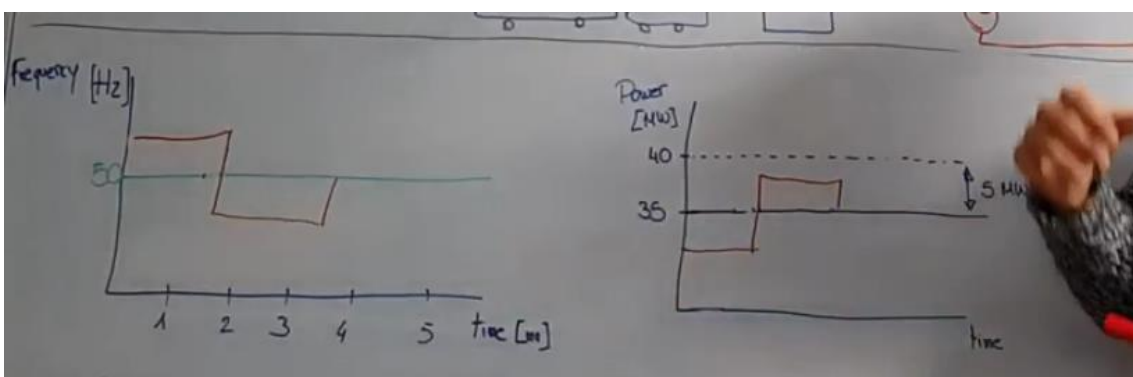
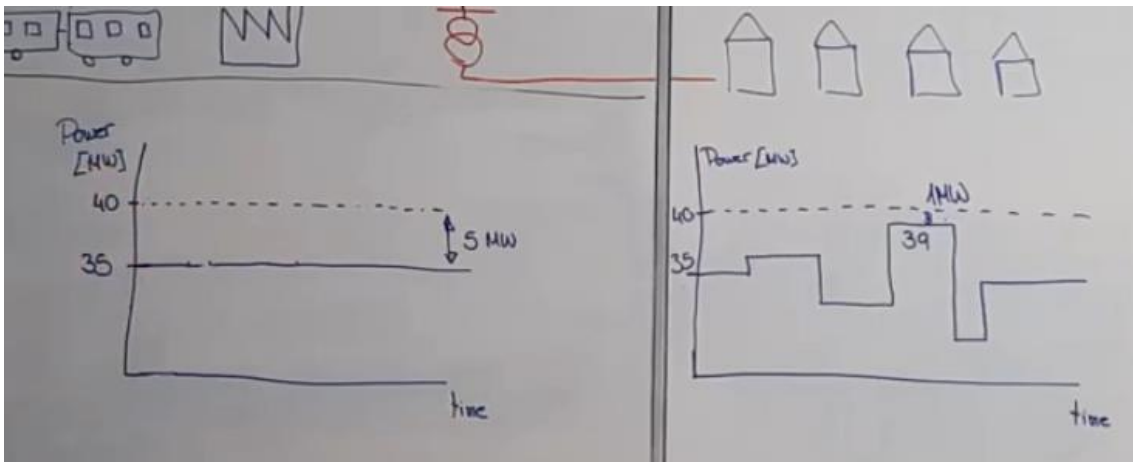
Intra-day market is trading for energy in 15-minute interval

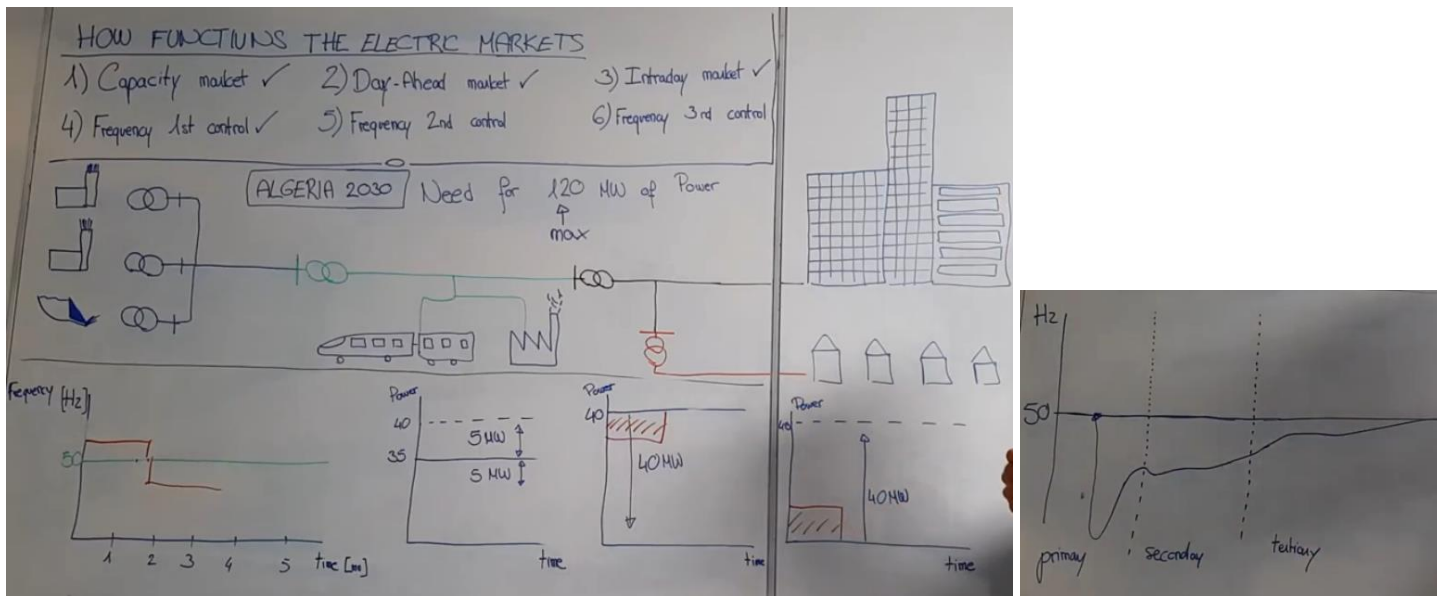
## HOW FUNCTIONS THE ELECTRIC MARKETS

- 1) Capacity market ✓
- 2) Day-Ahead market ✓
- 3) Intraday market ✓
- 4) Frequency 1st control
- 5) Frequency 2nd control
- 6) Frequency 3rd control

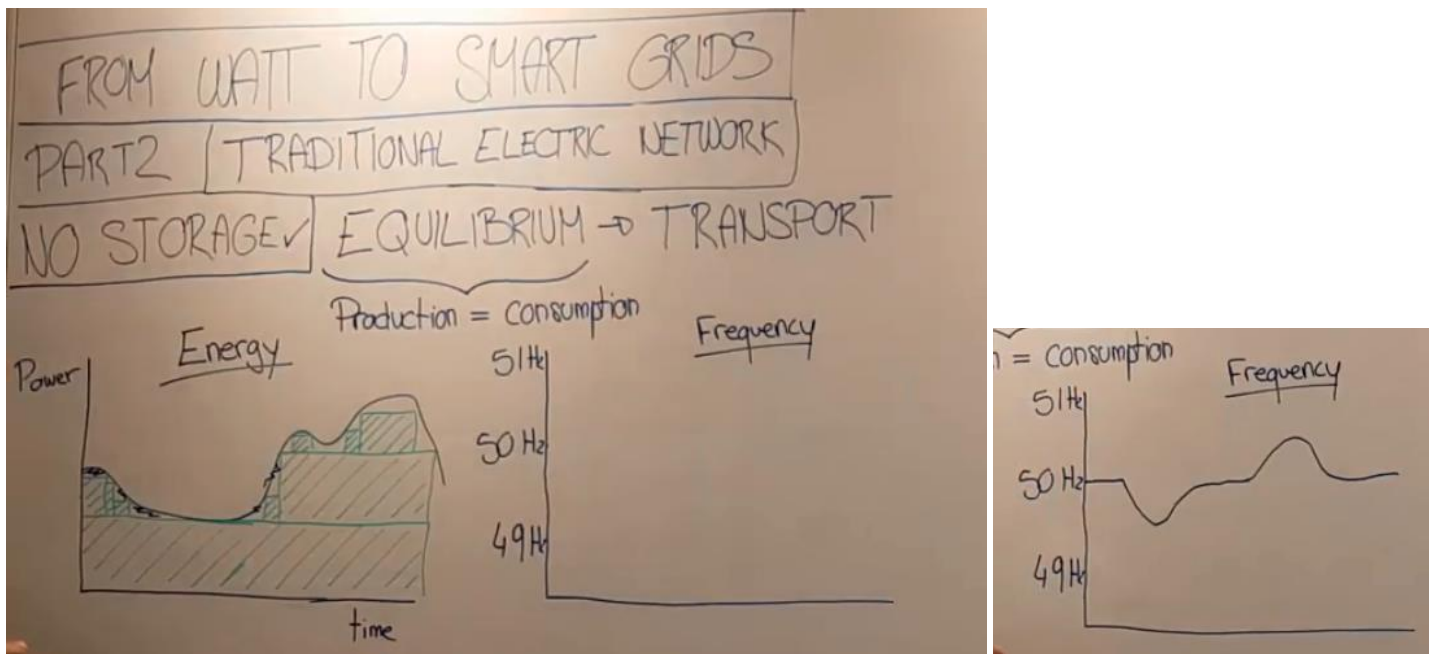


Frequency 1st control is about monitoring electricity in real-time to prevent fluctuations for real-time control



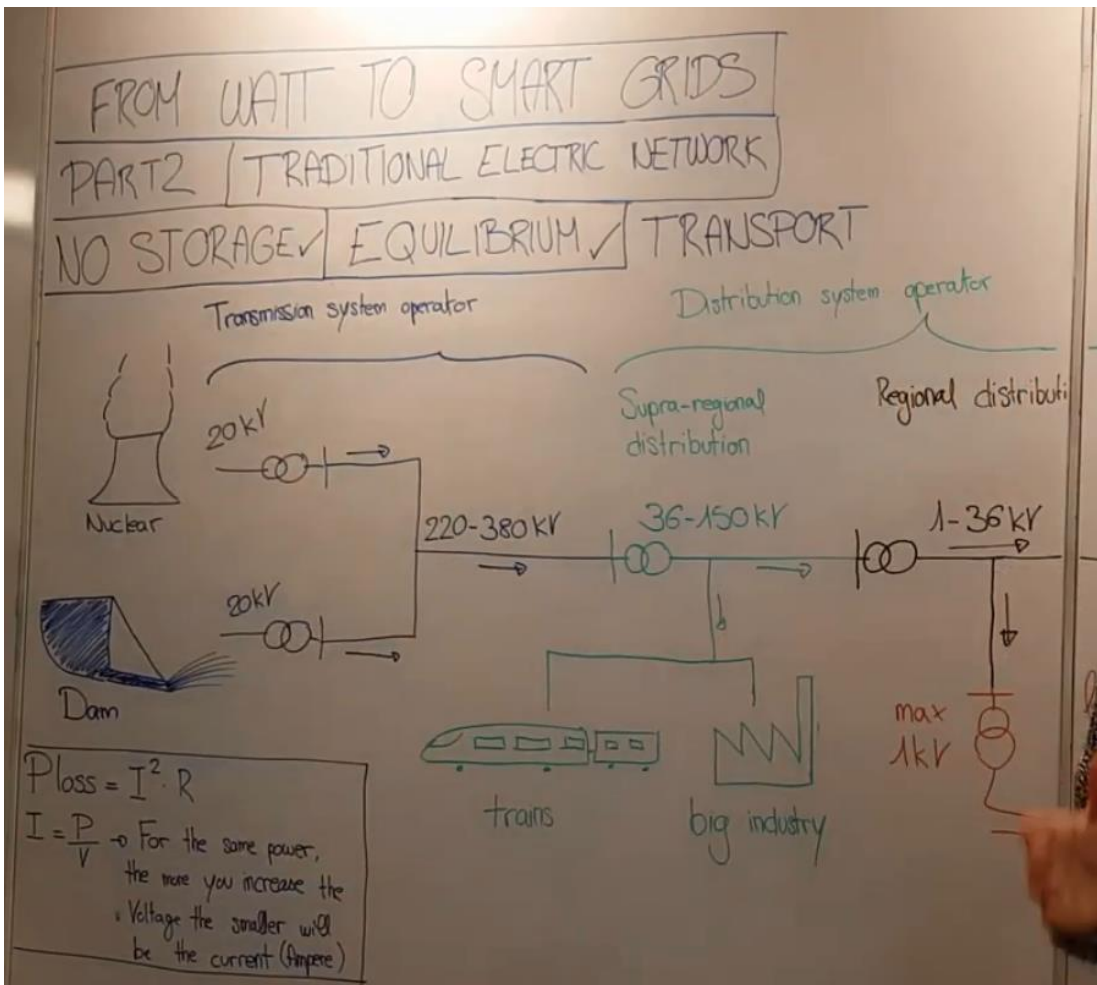


Electricity Storage, Equilibrium, Transport sshots



Production as to match consumption in real-time BUT most of the consumption can be forecasted. The real-time generation/availability of power in the grid can affect the frequency.





The goal is to increase the voltage in order to decrease the power loss during electricity transport.

