

# Navigating *grid saturation*



Your speakers today



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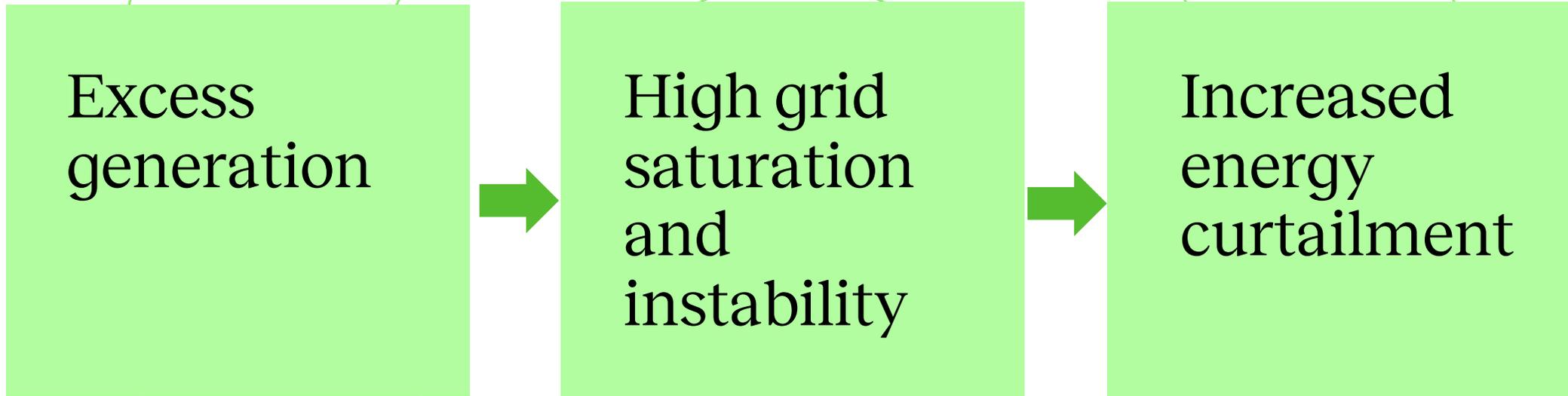
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01. What is grid saturation?
02. Situation per market
03. Solutions to overcome grid saturation
04. Strategic planning using RatedPower

# 01. What is grid saturation?

What is Grid Saturation?

Grid saturation refers to the level of electricity generation compared to the grid's installed capacity.



## What is Grid Saturation?

### Causes

- Delays in grid infrastructure expansion and upgrades
- Rapid growth of renewables and an increased demand of electricity
- Interconnection between regions
- Isolated systems

### Consequences

- Wasted energy in the form of renewables curtailment
- Market impact: Negative wholesale prices (e.g., European markets), affecting profitability
- Interconnection approval delays and bottlenecks



# 02. Situation per market

## UK

Over 739 GW of projects stuck in the grid queue

Nation Grid ESO overhauls connection process, prioritizing viable projects

Rapid growth of BESS solution hindered by grid delays

Source: GreenbergTraurig

## Germany

Intense grid saturation

High volume of BESS requests (over 500 GW) that need to be filtered out thus delaying viable projects from moving forward quickly

The government passed an energy reform package early 2025 which introduced flexible grid connection agreements

Source: pv magazine

## France

1.7 TWh of generated renewable energy got curtailed in 2024

Low BESS adoption worsens this issue

The French government is shifting towards incentivizing BESS growth through subsidy programs and regulatory reforms

Reality: changes in government has generated delays in this process

## Iberia (Spain & Portugal)

Grid instability due to high renewable penetration (around 55% in Spain and 80% in Portugal)

Supply exceeding the demand during production hours and leading to high curtailment losses

Very low BESS adoption in Spain (mainly Standalone solutions)

Source: RatedPower 2025 Renewable Energy and Solar Research Report

## Italy

A high number of connection requests (over 550 GW) leading to a significant grid congestion

The saturation is also driven by the growing demand from data centres

A new legislative draft (DL Energia 2025) is being prepared to help move projects forward and simplify data centres approvals

Source: Green Horse Advisory

## LATAM

Severe grid saturation crisis with over 54 TWh of renewable energy curtailed in 2024 (nearly \$7 billion in lost value)

Solar generation curtailment of 25% and 17% in Chile and Brazil respectively

Deep transmission bottlenecks and underinvestment in grid infrastructure compared to the rapid growth of renewables

Source: BNamericas

## Australia

Over 25% of curtailment is congested areas

Limitations in terms of existing infrastructure

High BESS adoption in the country to help relieve the congestion issue and lower curtailment

## US

High electricity demand driven by the rapid growth of AI data centres and renewables

An aging grid infrastructure that's lagging behind this growth

A high renewable curtailment that raises the concern for grid reforms and more BESS integration

Source: PV Tech

# 03. Solutions to overcome grid saturation

## Solutions to Overcome Saturation

- Grid expansion & modernization
  - Smart grids
  - Strengthening regional interconnection
  - Faster permitting and approvals
  
- More subsidy programs to help incentivize and accelerate the adoption and construction storage solutions such as BESS
  
- Flexible demand: EV charging and industrial operations scheduled during high renewable generation hours

# 04. Strategic Planning using RatedPower

# Questions?

We're all ears!

Drop yours in the question box!



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