

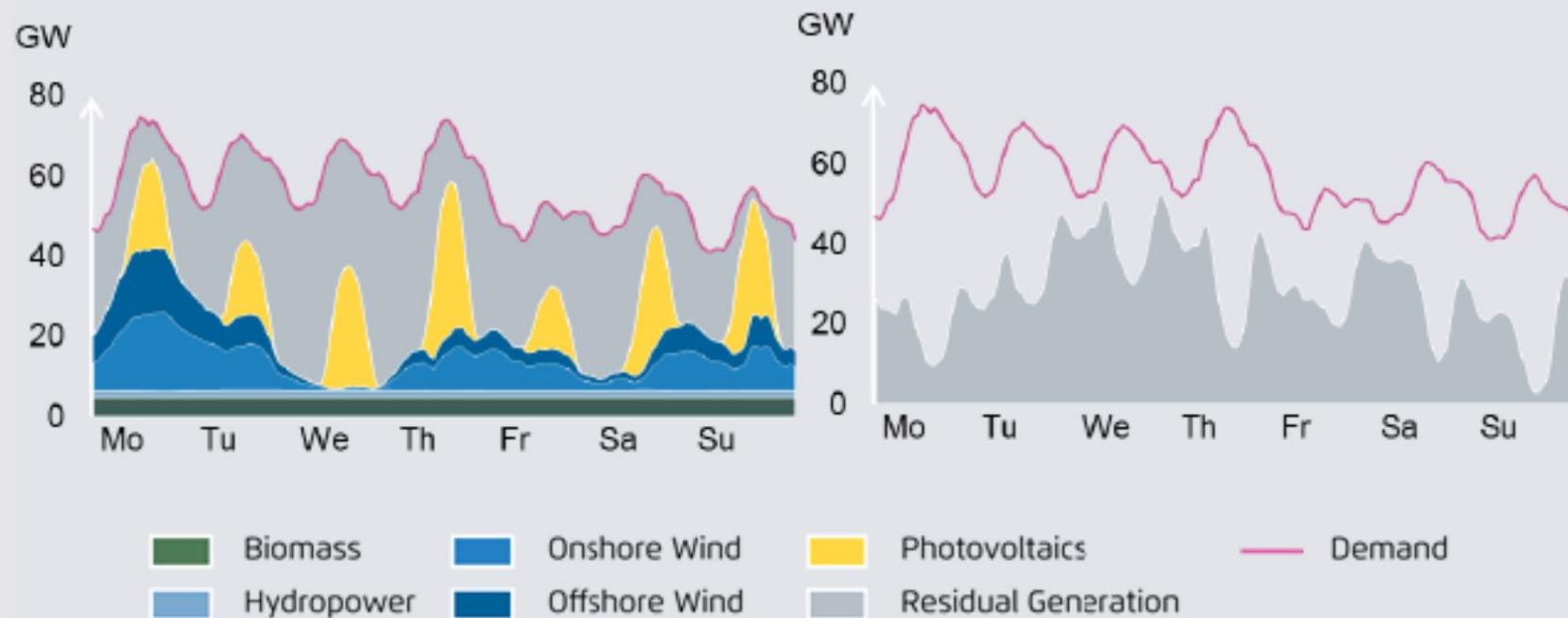
Why reciprocating gas engines for the European Power Industry?

Melle Kruisdijk

**CIMAC Circle Panel Discussion
PowerGen Europe
Milano, 21 June 2016**

Power systems are changing rapidly

Electricity generation and consumption in a sample week with 50% RES share



Flexibility is key
Thermal baseload is suffering

Key question to address



How to attract the necessary investments in flexibility?



What needs to be done

Fix the flaws

- **Balancing responsibility for all**
- **Target balancing cost to the origin – not to consumers**
- **Marginal pricing and cost reflective imbalance charges**

Market signals

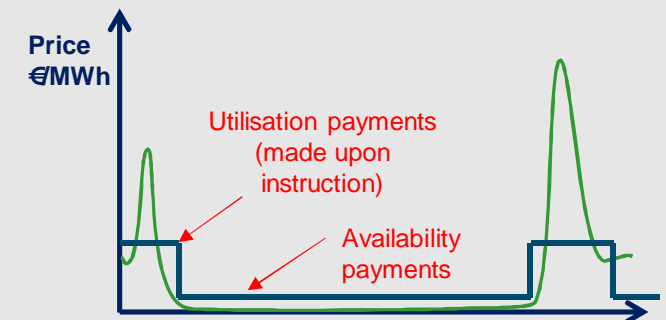
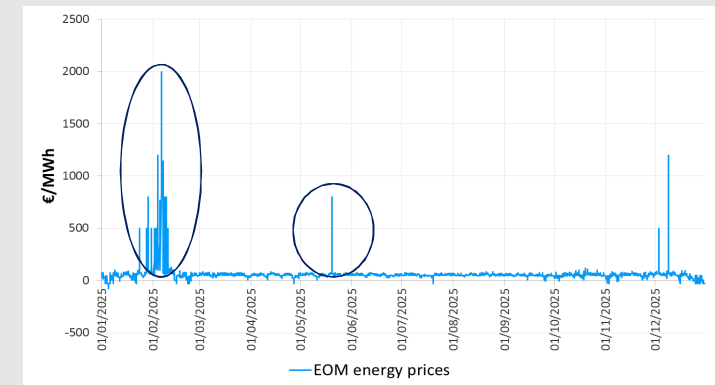
- **Short-term markets more important**
- **Volatile wholesale prices**
- **Increased exposure for all market players**

Effect

- **Hedge against volatility**
- **Signal the value of flexibility and need for new investments**
- **Improved system efficiency will decrease overall electricity costs**

Stacked revenue streams – flexibility is key

- Income from high electricity price spikes
- Income from hedging contracts
- Income from heat delivery contracts
- Income from A/S markets (frequency control, fast reserve, etc.)



Reciprocating engines are well positioned

THANK YOU