



Optimal Incentives for Belgian Electricity Challenges

ENERDAY Conference
Friday, 11 April 2014
Dresden

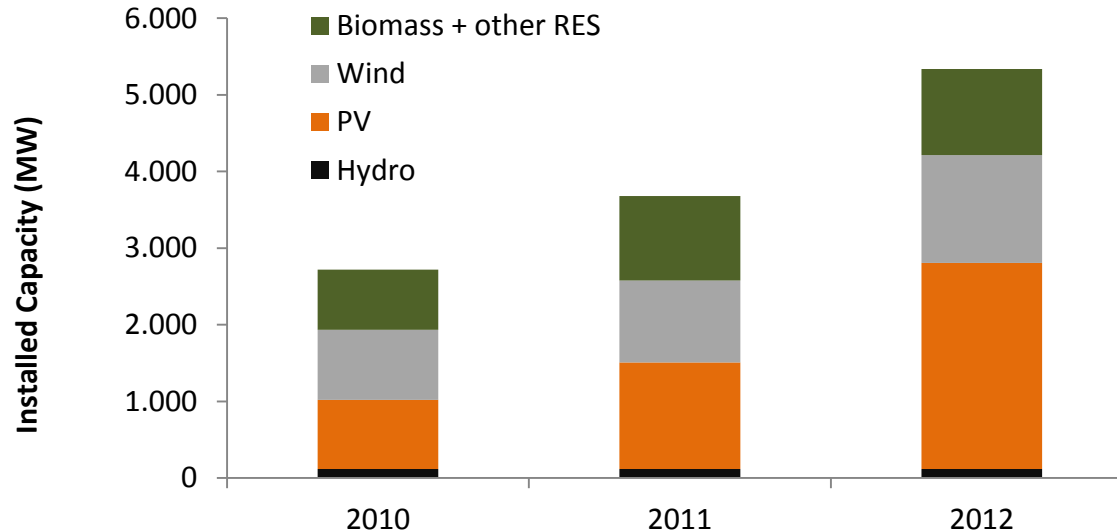
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Overview

- Introduction
 - Current trends in the Belgian electricity market
 - Nuclear phase out in Belgium
- Methodology
 - Low Res vs High Res scenarios
 - Covering peak demand
 - Managing renewables
- Results
 - Cost of the electricity transition (nuclear -> RES)
 - Trade off: RES vs costs
 - Surplus Risk

Expansion of renewables in Belgium

As in Germany, subsidy schemes resulted in a significant increase of PV and other renewables

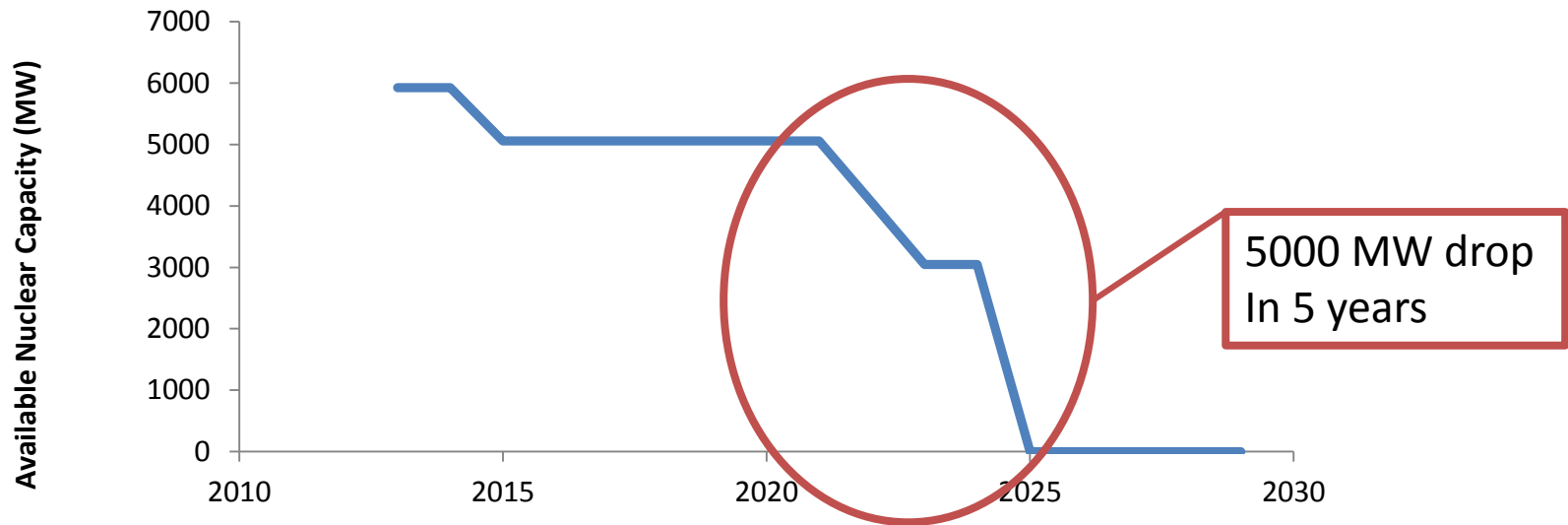


Reaching 2020 EU-target will require extra efforts

Now 14% → target is 20%

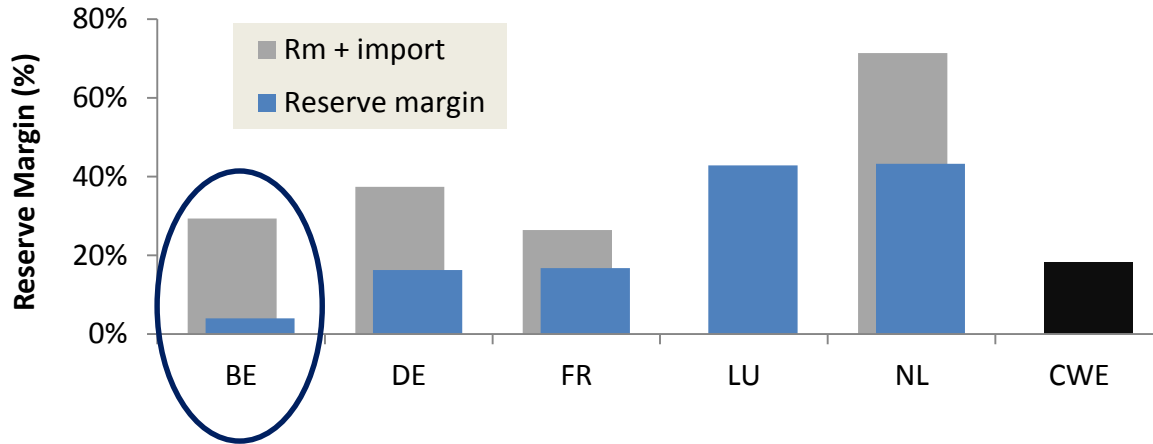
Nuclear phase out

- Phase out Plan “Wathelet”



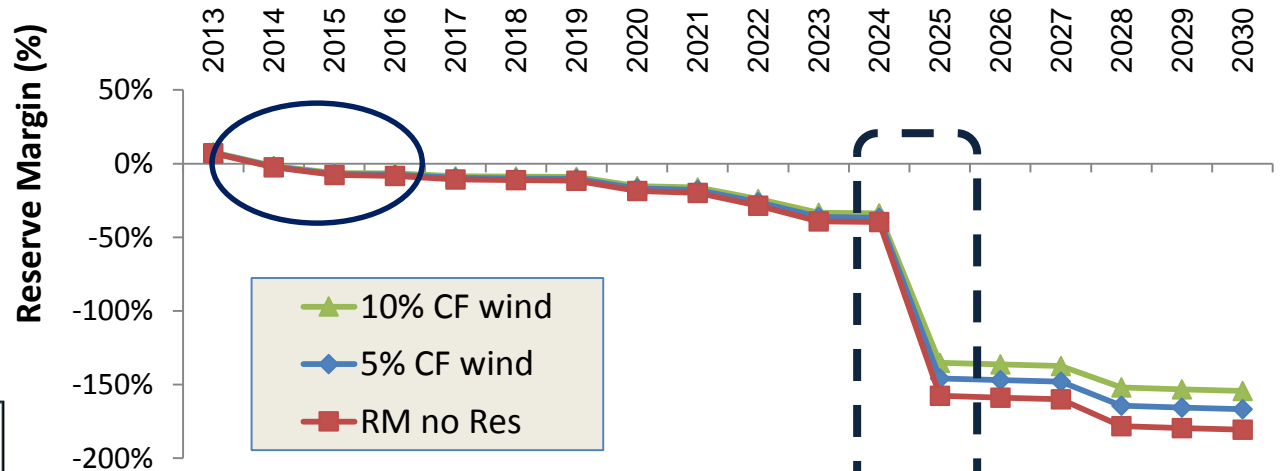
RISK OF SHORTAGE ???

Result: drop in Reserve Margin



Belgium has relatively low RM

RM will be negative in near future



Severe drop in year 2025
 ↓ 3000 MW of capacity

“Secure Scenario”

RM < 0% needs to be avoided

New scenarios → > 5 % RM at all time

Fill the Capacity Shortage with

- Biomass
- CCGT
- OCGT

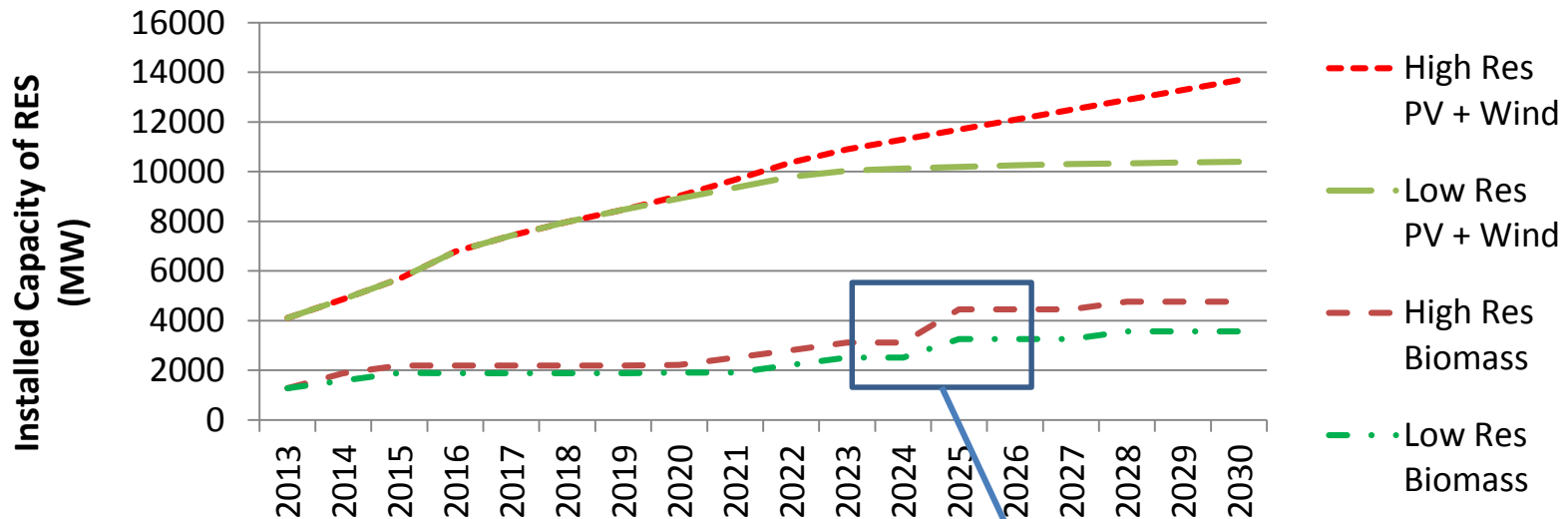
Additional growth of PV and wind capacity to meet RES targets

RES growth scenarios

High Res <-> Low Res

Wind + PV: no contribution to RM

Biomass: CAN replace Nuclear Capacity



Cap ↑ due to Phase out

8 secure supply policy scenarios

1. Meeting peak demand

Capacity Remuneration (NEW assets)
Demand Side Management (DSM)
“Availability” incentives (OLD Thermal)

2. Renewable integration

Grid priority for renewables (Contract for Difference)
Flexible use of renewables (CFD- market Participation)

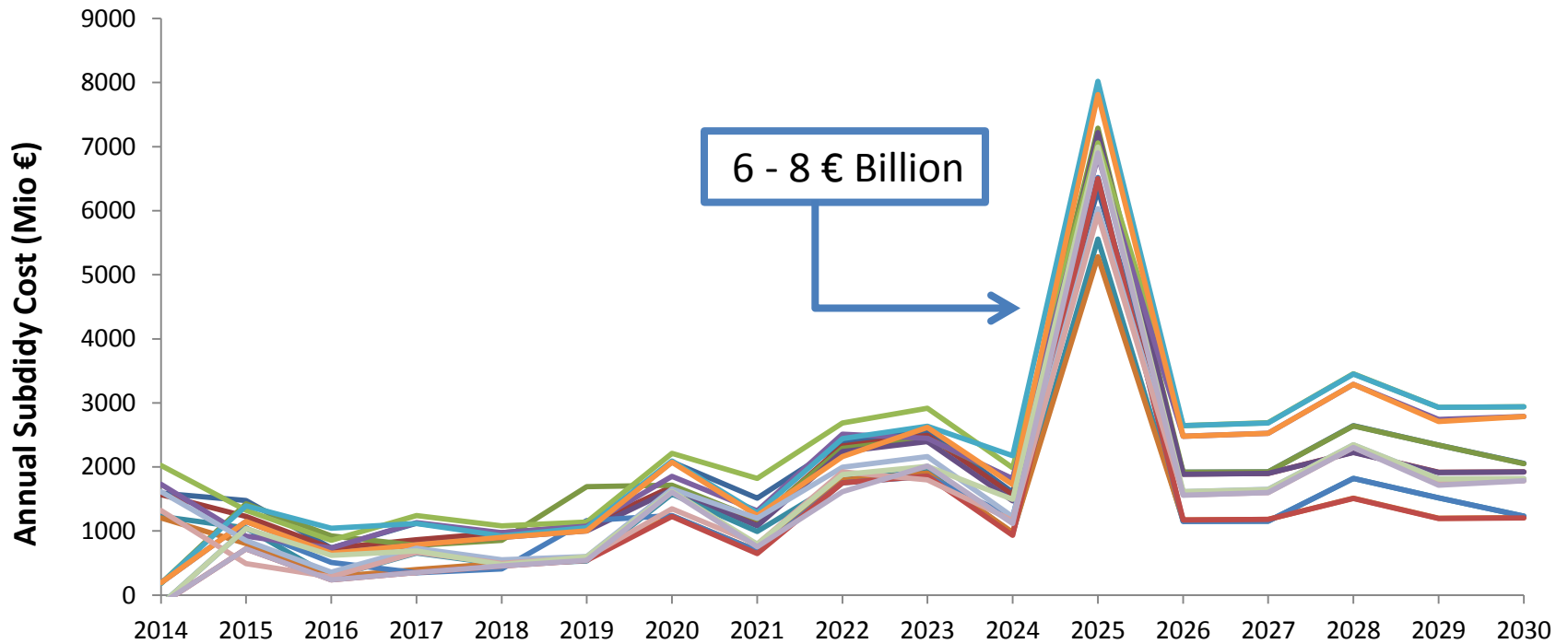
<i>RES Supply</i>	<i>Capacity Need</i>	NEW	DSM	Old Thermal	DSM + OT
CFD contract for difference		1	3	5	7
CFD-MP CFD-market participation		2	4	6	8

Results

1. Subsidy costs
2. Total system cost
3. Surplus risk
4. Conclusions

Costs will increase in any scenario

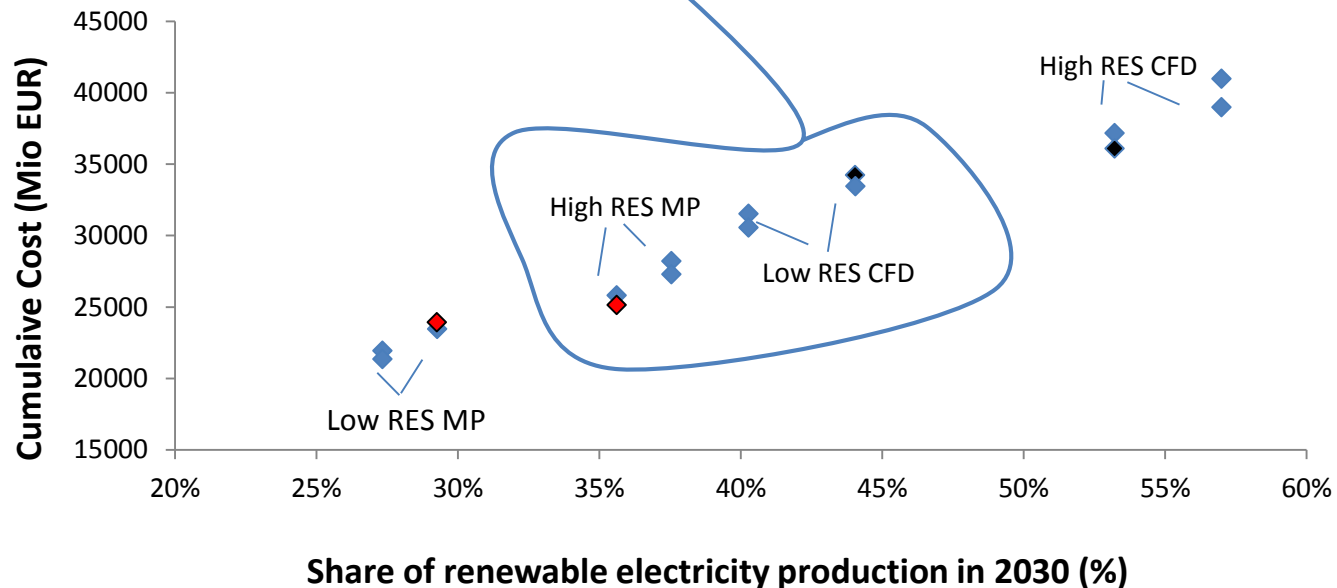
Huge investment/subsidy peak in 2025



Subsidy Costs increase with higher share of RES

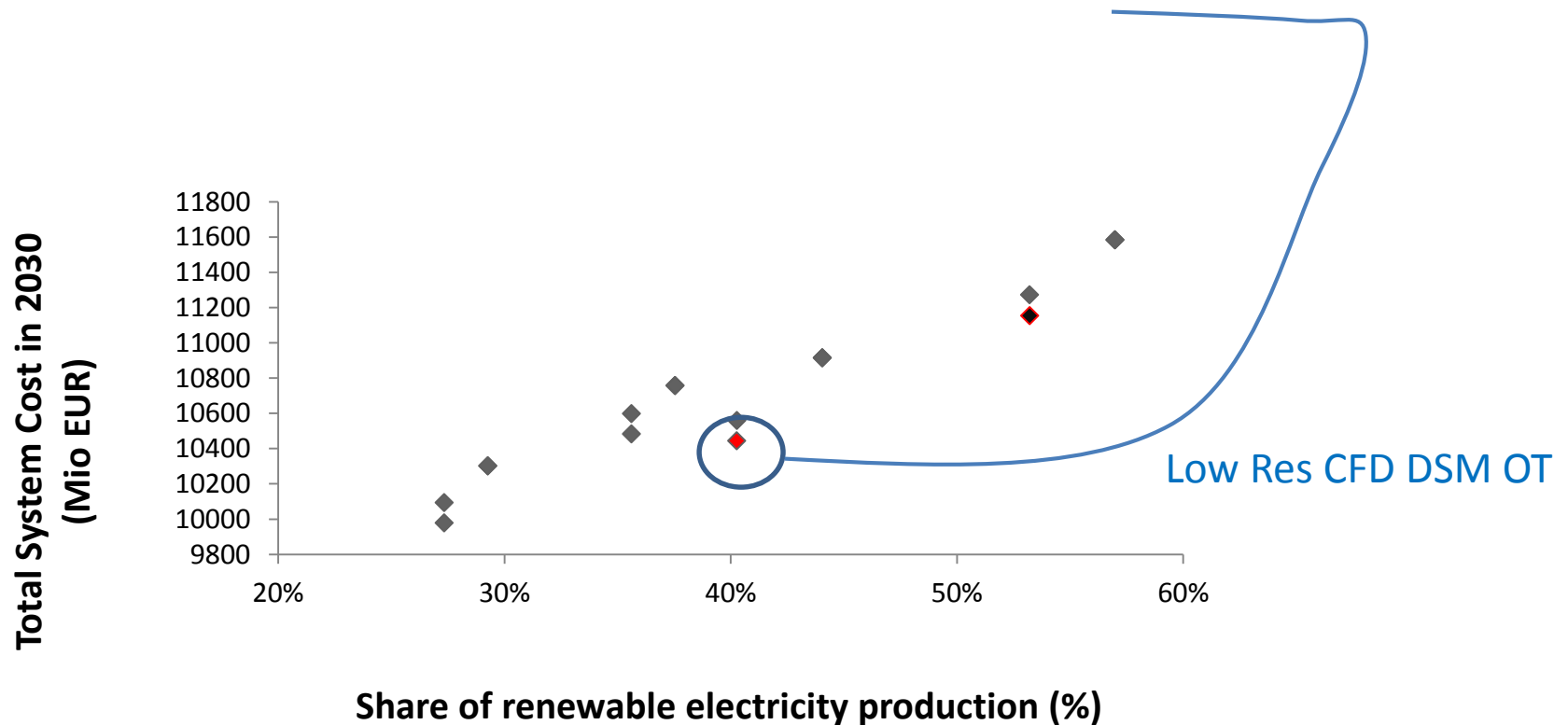
→ Higher cost of biomass (vs CCGT)

High res share < low res share → flex use of BM and shedding



Similar graph for Total annual system cost in 2030

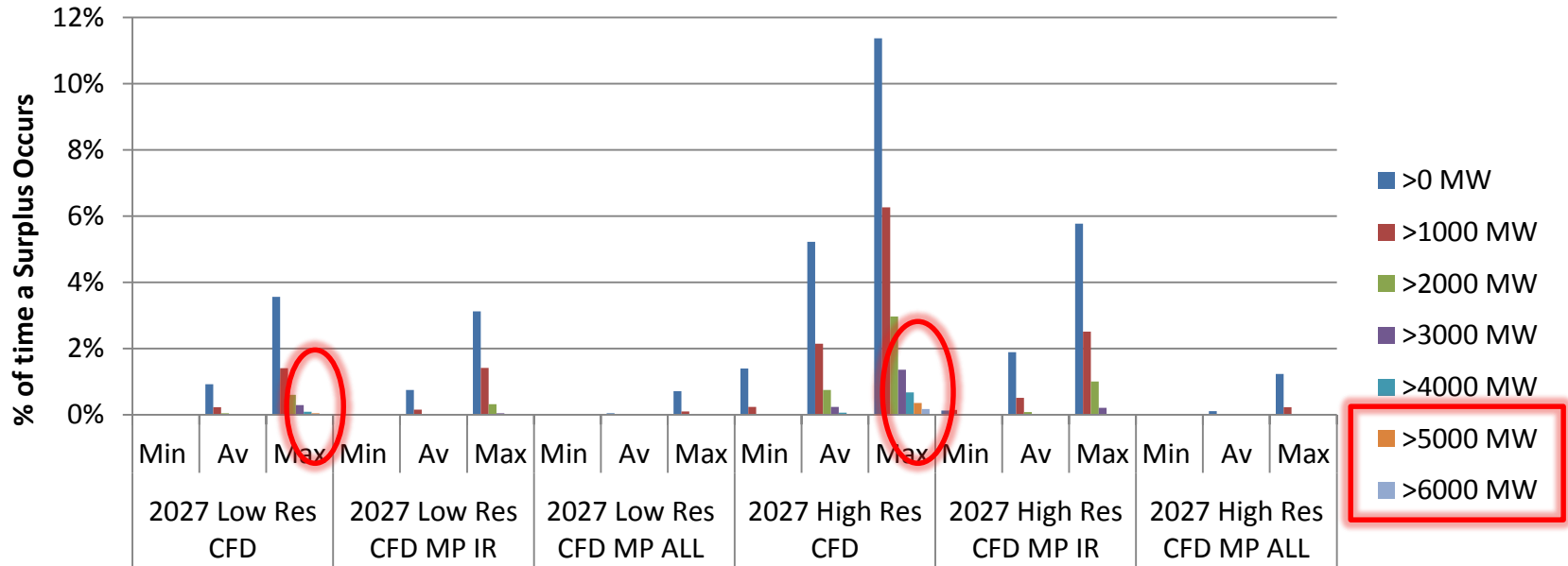
→ Notice RED diamond: high res share at relatively low costs



Surplus Risk?

Surplus risk in High RES – CFD scenario is very high

Even in LOW RES – CFD scenarios there is still some risk



Overall conclusions

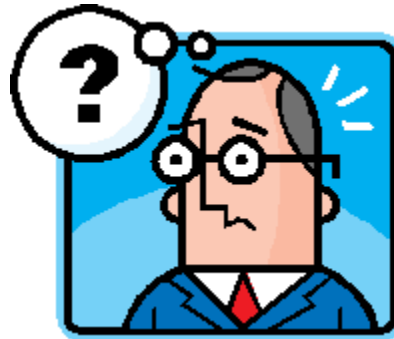
1. Low RES scenarios are cheapest
2. High RES only possible with increased Market Participation of the RES
3. Demand Side Mgmt offers many benefits
4. Capacity remunerations seem essential to keep RM above 5%

A multifaceted approach is vital
There is no “silver bullet”

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THANK YOU



Questions?

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