



EOM capability and impact assessment of capacity mechanisms

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Starting point: Two related studies for the BMWi...

Energy-only-market (EOM) capability

Assessing the performance of Germany's EOM regarding generation adequacy in the electricity sector



FORMAET
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Impact Assessment of capacity reliability mechanisms (CRM)

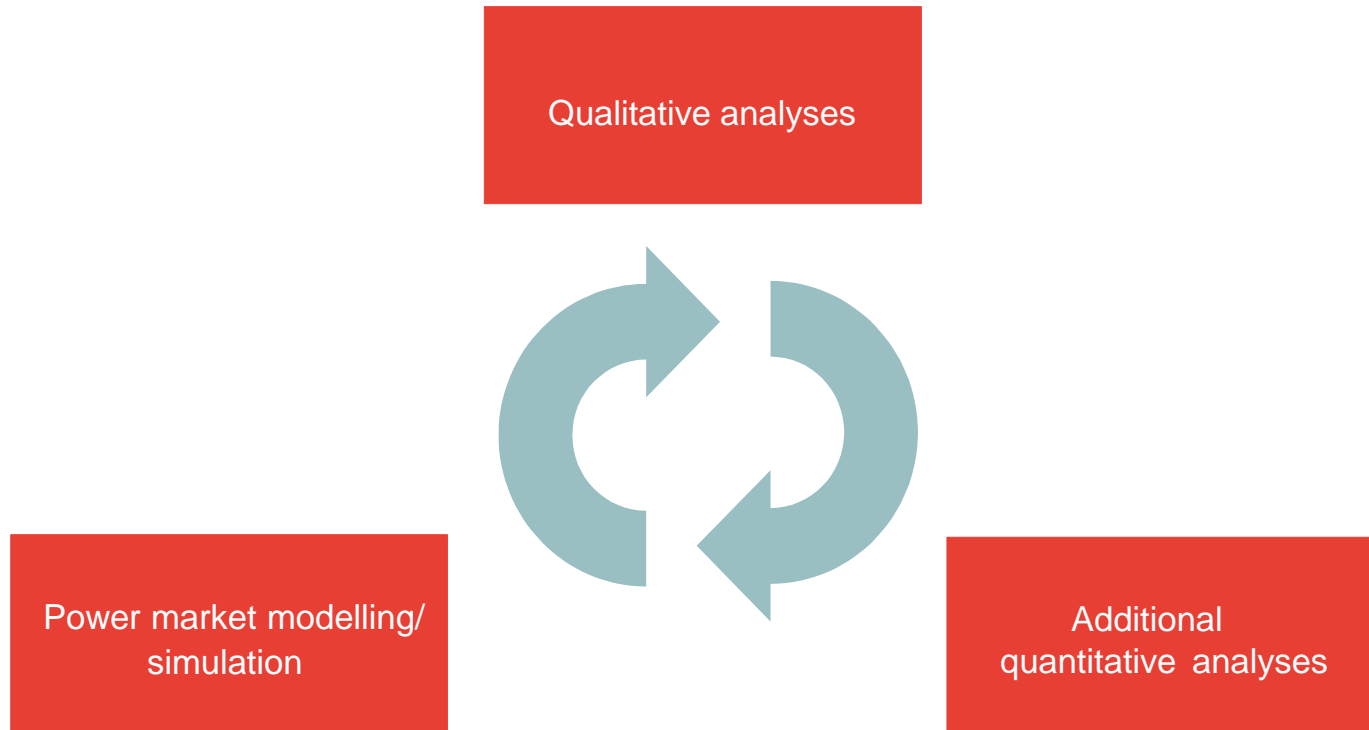
Comparative assessment of impacts of four different CRM in order to evaluate the (relative) advantages and disadvantages of the mechanisms



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... with strong interdependencies

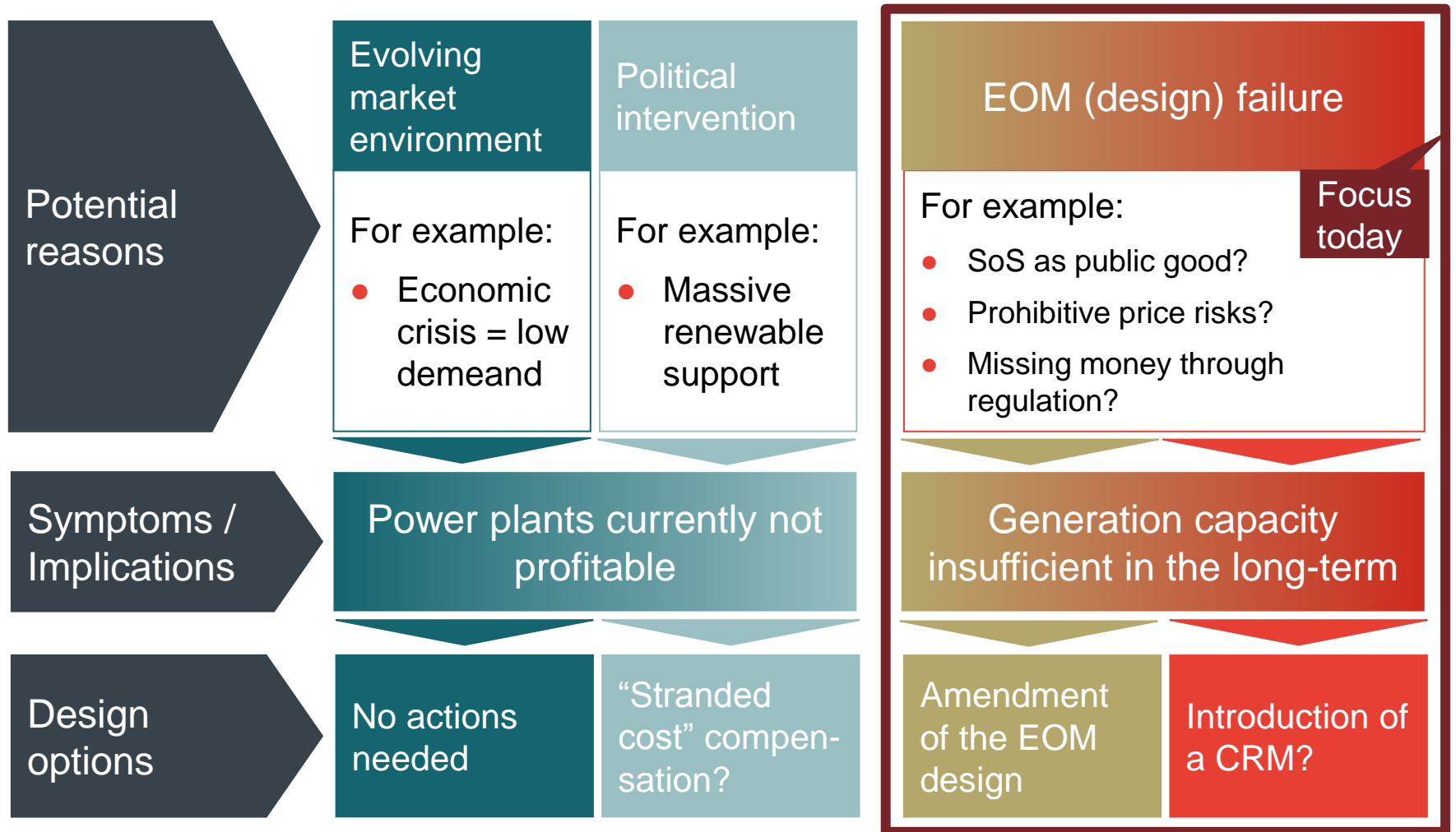
Assessment is based on...



... qualitative and quantitative analyses

- EOM capability
- CRM impact assessment
- Summary

Problem definition is essential: Market design...

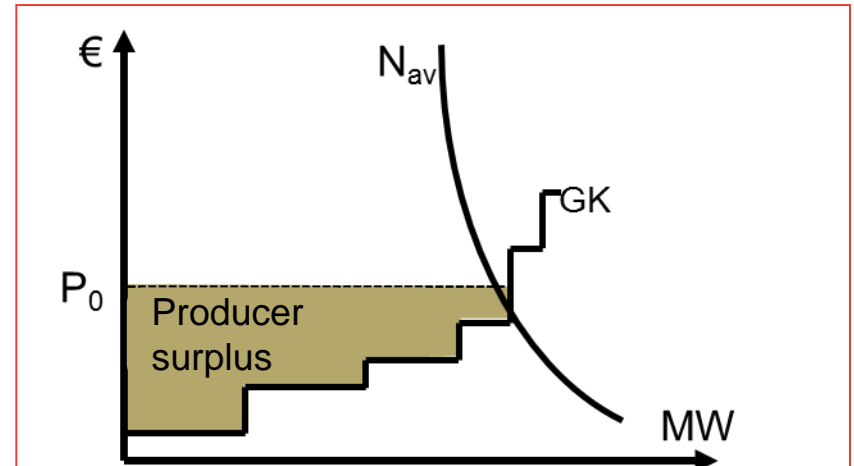


... needs to appropriately address relevant problems

Starting point for generation adequacy debate: Peak Load Pricing in competitive energy-only markets...

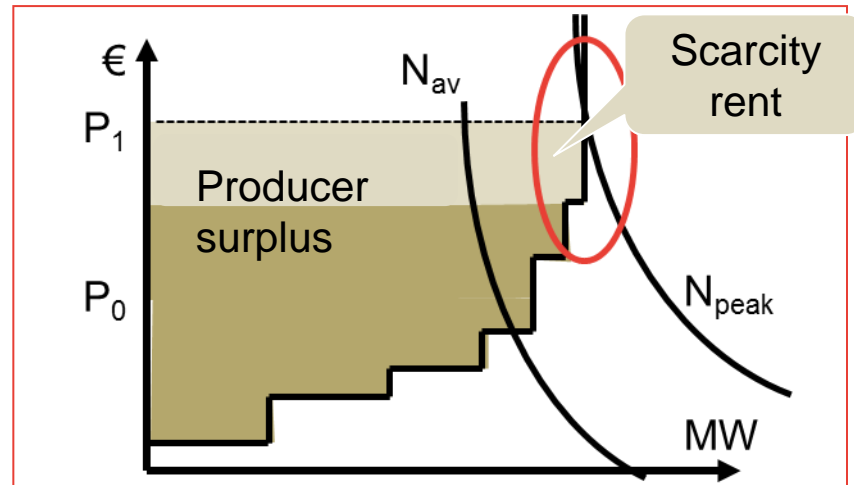
Pricing in normal situations

- Suppliers bid marginal costs (“Merit Order”)
- All accepted suppliers get “uniform price”
- Infra-marginal suppliers earn producer surplus



Scarcity rents

- At **peak load prices** need to exceed the marginal costs of the most expensive power plant
- Scarcity rent for all suppliers

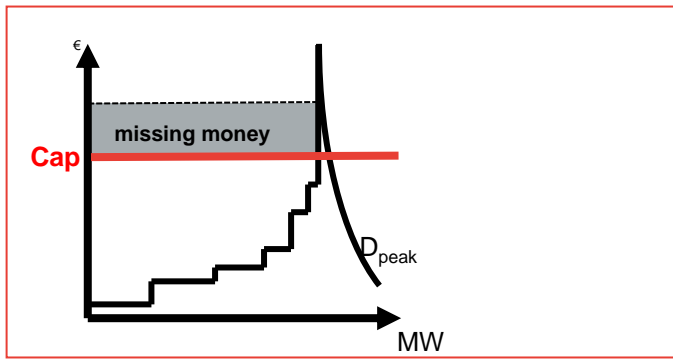


... leads to optimal plant park

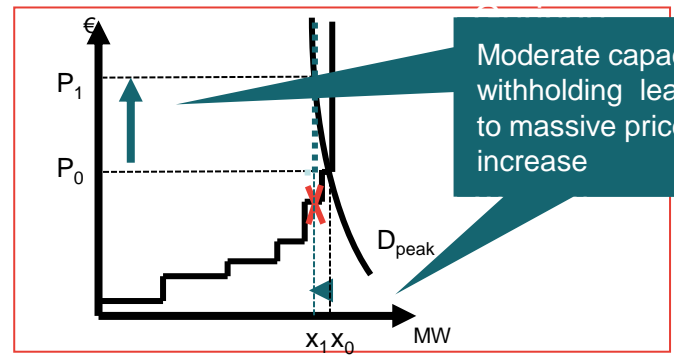
Potential imperfections in the EOM ...

Possible market distortions

Missing money by regulatory intervention in EOM?



Abuse of market power in EOM



Assessment

- No regulatory price cap in GER
- Potential distortion of imbalance prices

- No market power abuse today
- German power market contestable

Reforms

- Adjust imbalance settlement (e.g. marginal pricing)

- Remove entry barriers e.g. for demand flexibility (grid tariff structure)

... are irrelevant or can be tackled by reforms within an EOM

Summary of EOM capability

Capacity price elements in EOM

- In theory, an ideal EOM can guarantee for generation adequacy without “explicit” capacity payments

Possible market distortions



Assessment

- Potential market (design) failures are either not relevant in the German/European context or can be mitigated by reforms

Potential market reforms (selection)

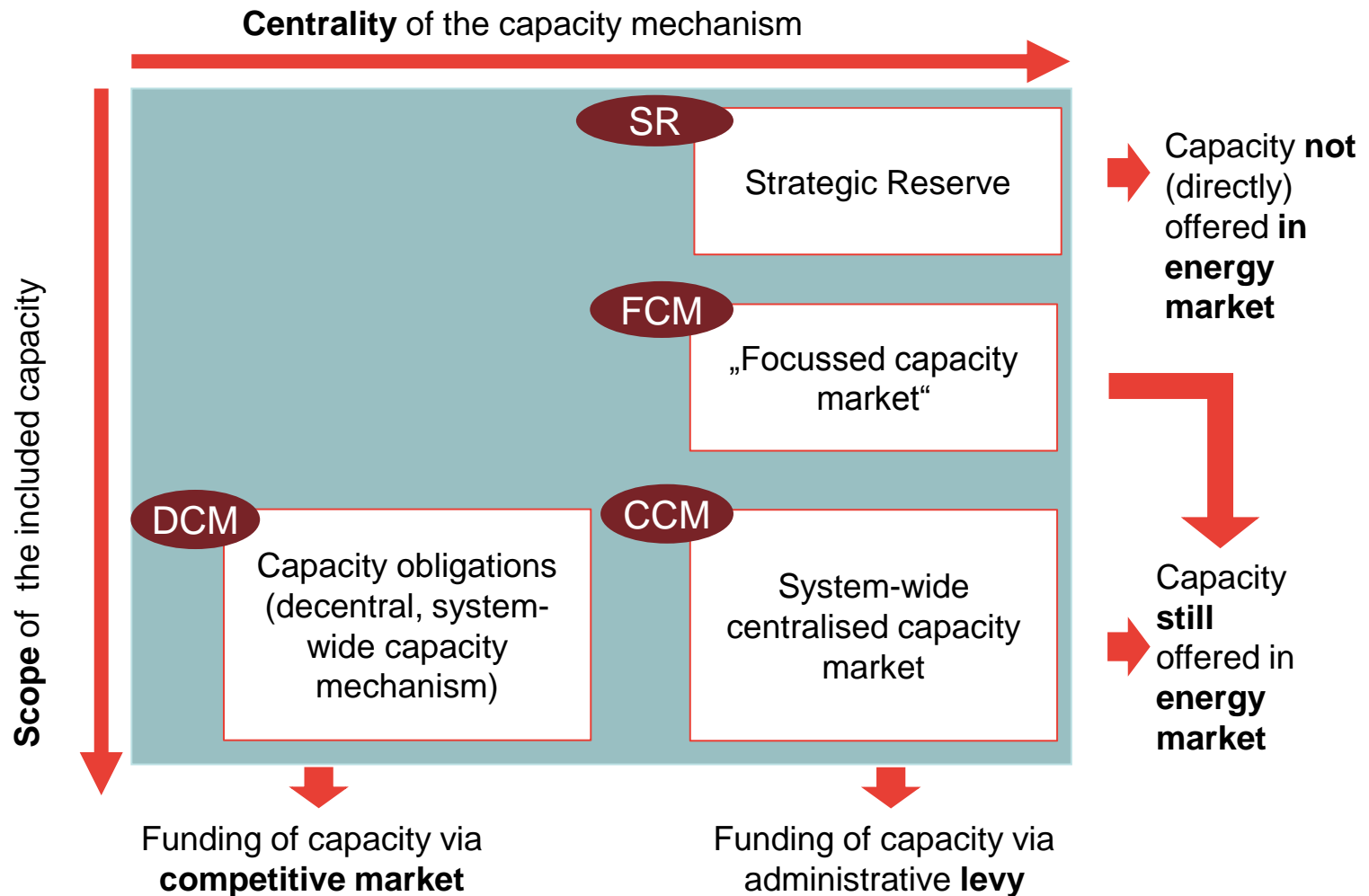
- Improving balancing rules (e.g. marginal pricing)
- Facilitating market entry for **demand flexibility**
- **Stable political framework** (e.g. RES and CHP)
- Explicit **commitment** to accept scarcity prices

Conclusion

- Real EOM in Germany / Europe is able to guarantee for generation adequacy if reforms are implemented

- EOM capability
- CRM impact assessment
- Summary

Capacity mechanisms (CM) evaluated in the “Impact Assessment”



Summary - assessment of the consultants

Please note: political control of capacity/level of security of supply is not an economic value by itself

Effectivity (political accuracy)
 Effectivity (consumer preferences)
 Efficiency
 Regulatory risks / policy
 International compatibility

Competition
 Reversibility
 Distribution

Please note: Distribution is not an economic criteria

Here evaluation from the perspective of domestic consumers (at the expense of producers and overall efficiency)

	Effectivity (political accuracy)	Effectivity (consumer preferences)	Efficiency	Regulatory risks / policy	International compatibility	Competition	Reversibility	Distribution
EOM (today)	-	+/-	+/-	++	++	+/-		
EOM 2.0	+/-	+	++	++	++	+		
Reserve	+	+/-	+	+	+	+/-	+	+/-
Decentral comprehensive CM	+/-	+	+/-	+/-	+/-	+/-	-	-
Central comprehensive CM	+	-	-	-	-	+/-	+/-	-
Focussed CM	+	-	--	--	--	+/-	+/-	+



Decisive criteria



Less relevant criteria

CRMs come with extra cost that increase with the severity of the CRM market intervention

CRM system cost are moderate...

- As long as we assume a well-informed „central planner“, extra cost of most CRMs are moderate::
 - ~ 2 Mrd. € for a Strategic Reserve or a comprehensive CRM (NPV 2015-2039)
 - ~ 6 Mrd. € for a „Fokussed capacity market (NPV 2015-2039)

... but CRM go along with significant regulatory risks...

- “Central planner” has to take many complex decisions, which are now taken decentralised by market participants
- Market participants will increasingly optimise against the regulatory setting, not according to consumer preferences
- Considerable risk of a „slippery slope“ with a continuous expansion of market interventions (see US examples)

...that result in high extra costs

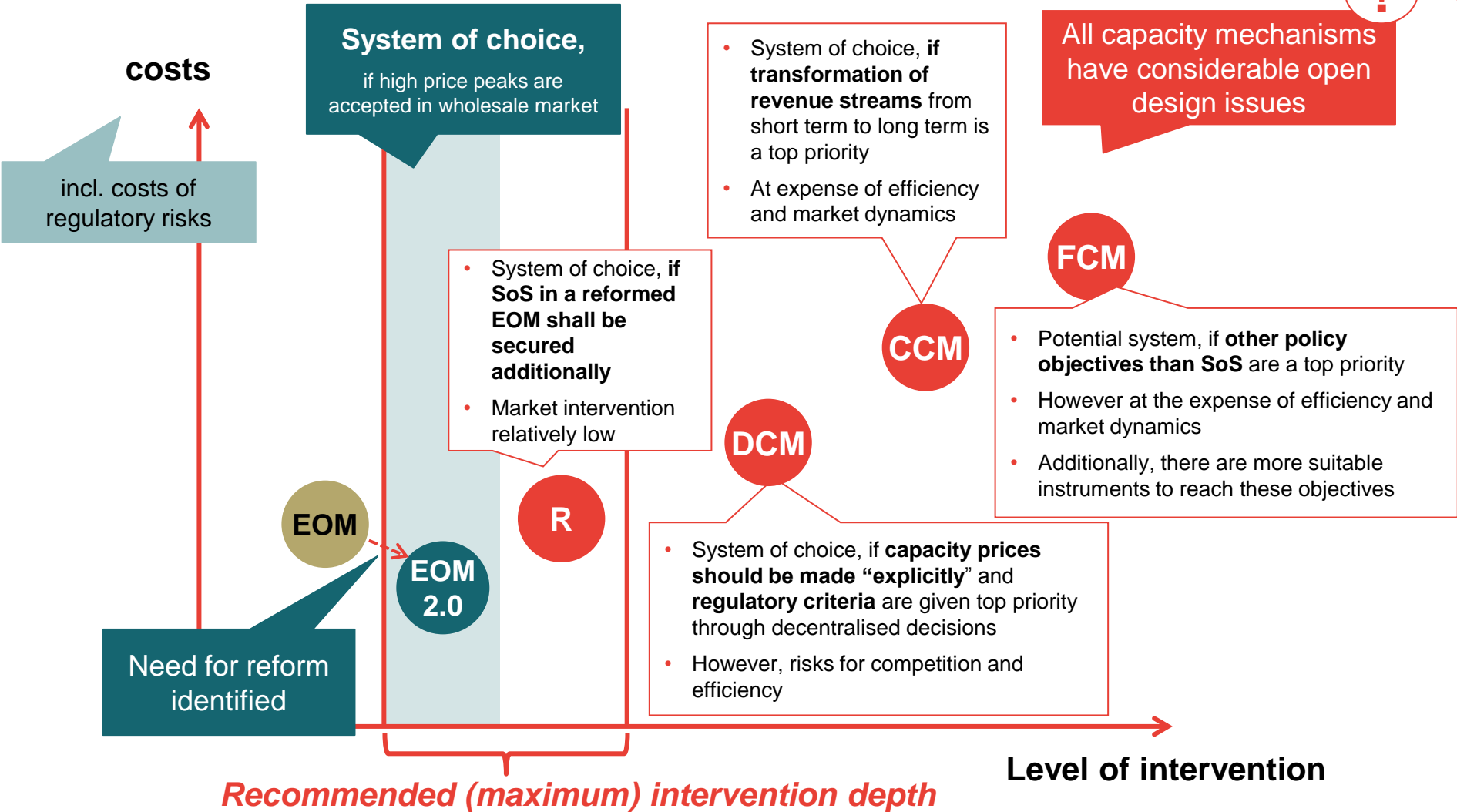
- **Extra cost through regulatory risks likely to exceed direct system costs by far**



- EOM capability
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Conclusive assessment based on...

illustrative



... costs and depth of intervention of CMs



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