



Federatie van de Belgische Elektriciteits- en Gasbedrijven
Fédération Belge des Entreprises Électriques et Gazières
Federation of Belgian Electricity and Gas Companies

FEBEG reactions

Investment thresholds and eligibility criteria

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Members



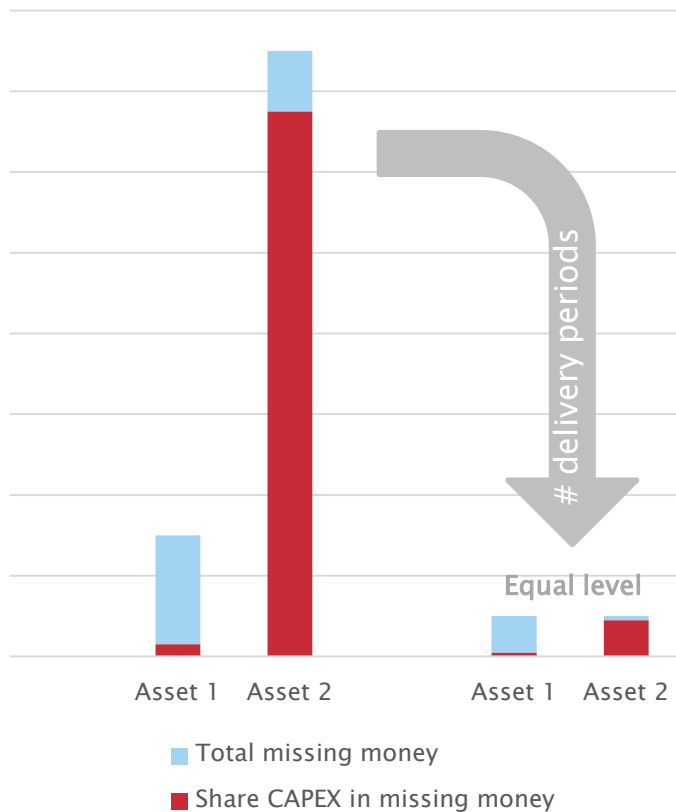
1. Investment thresholds and eligibility criteria

Eligible CAPEX

- Contribution to security of supply: not only investments (CAPEX) for new or additional MW's ... but also to **keep (part of) MW's in the system** that would otherwise – without the investments – be decommissioned (= lifetime extension)
- Lifetime extension: not only technical end of lifetime (= # running hours) ... but also **economical end of lifetime**

1. Investment thresholds and eligibility criteria

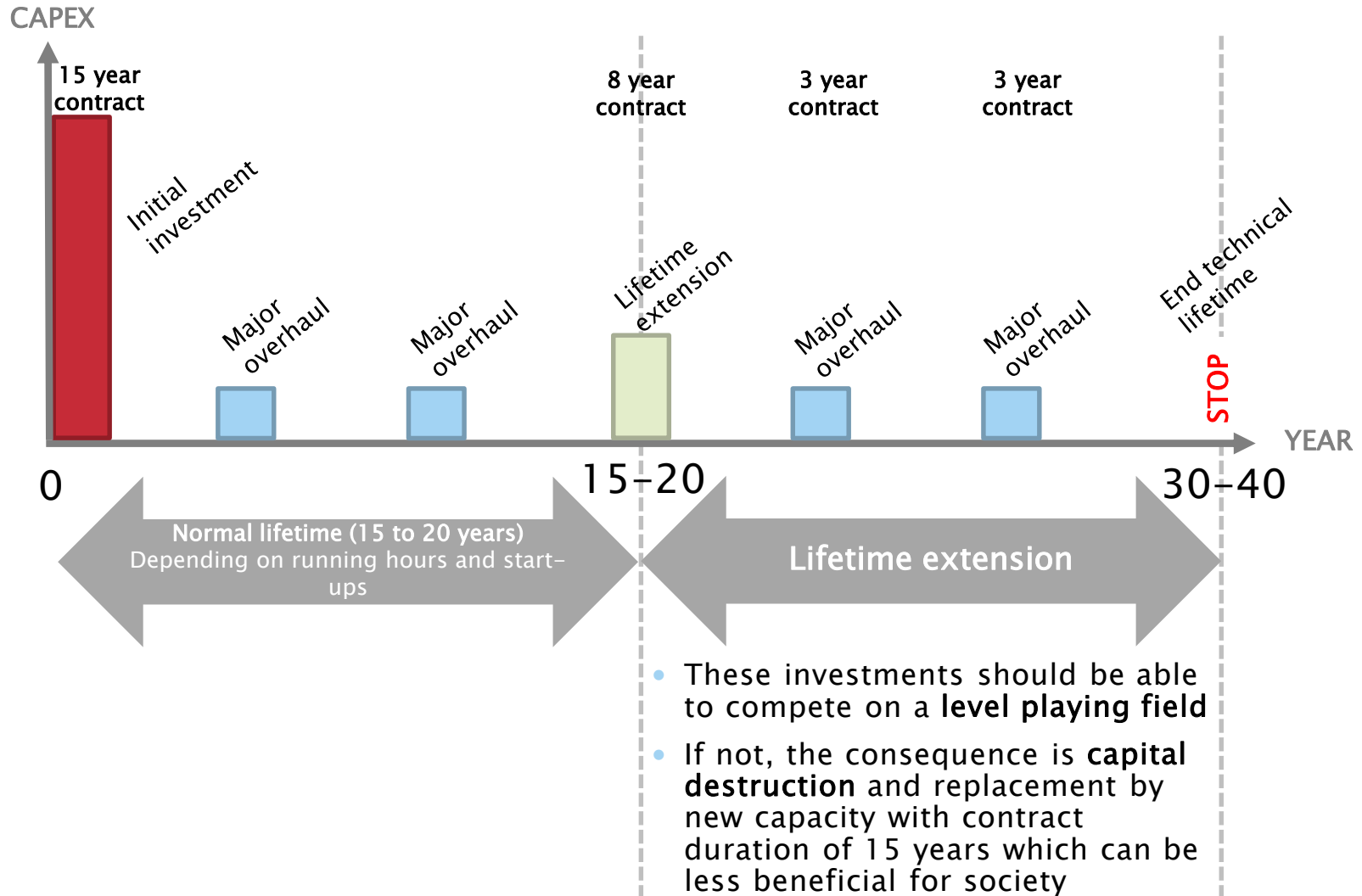
Importance of leveling all CAPEX



- 'The capacity remuneration mechanism is designed to keep the **cost thereof as low as possible**' (article 7 undecies, §1 Electricity Law)
- Therefore, 'investment thresholds' should be set in such a way that there's an **optimal and fair competition between all investments** taking into account all needed CAPEX and missing money
- **Suboptimal investment thresholds or excluding CAPEX as eligible CAPEX will increase the cost of the CRM**
- Belgium has **4 capacity categories** (1, 3, 8 and 15 delivery periods) which allows better tuning than in other countries
- Initial draft law: contracts for 1 year (existing), 3 years (ideal for major overhaul), 8 years (refurbishment) and 15 years (new)

1. Investment thresholds and eligibility criteria

Illustration: lifetime of CCGT



1. Investment thresholds and eligibility criteria

CASE #1: CAPEX 'Major overhaul' (1)

Scope

- All major equipment is inspected deeply, where needed parts/components are replaced
- It represents typically: gas turbine HGPI (Hot Gas Path Inspection = replacement of combustion and turbine hardware), overhaul of generator (e.g. rotor extraction), overhaul of steam turbine, inspection and works in boiler

Frequency

- Every 4–6 year / 24K EOH (Equivalent Operating Hours) / 900 starts
- Depends strongly on OEM and upgrade level of the GT

1. Investment thresholds and eligibility criteria

CASE #1: CAPEX 'Major overhaul' (2)

- Investment in major overhaul is **economical decision** determining continuation of asset in safe and secure way (= economical lifetime extension)
- Spreading investments in major overhaul increases **visibility** on cost recovery and reduces risks
- Spreading investments in major overhaul avoids **capacity price spikes** – if no capacity with higher missing money is needed – limiting the revenues for other capacities
- It's being considered to introduce a **price cap for contracts of 1 delivery period**: such price cap will have to be set too high to include CAPEX for major overhaul and will therefore be less effective
- Contract of 3 delivery periods **contributes to security of supply** as it guarantees availability of this capacity during this period

Considering CAPEX for major overhaul as eligible CAPEX contributes to ensuring security of supply at lowest cost

1. Investment thresholds and eligibility criteria

CASE #2: CAPEX 'Lifetime extension' (1)

Aging	Scope	<ul style="list-style-type: none">- Major overhaul and a series of inspections and replacements to extend the life of certain equipment and parts, e.g. complete disassembly of gas turbine rotor for in depth non destructive testing- Potential replacement of DCS, I&C, (if obsolete), replacement of boiler parts, replacement (if any) of certain pumps or motors
	Frequency	Every 15–20 years / 100k EOH (equivalent Operating Hours) / 3000–5000 starts
Upgrades	Scope	<ul style="list-style-type: none">- Technological evolutions (improved flex, efficiency, emissions and maintenance interval) might be needed to get back in the merit order or to comply with permit (NOx)- It represents typically: replacement of hardware of the turbine, e.g.: compressor, blades and vanes,... possibly replacement of the complete gas turbine, the installation of by-pass stack, ...
	Frequency	Mostly combined with lifetime extension

1. Investment thresholds and eligibility criteria

CASE #2: CAPEX 'Lifetime extension' (2)

- Assets at **end of economical lifetime** will be decommissioned
- Investments are needed to **maintain the capacity or part of the capacity** in the system (= contribution to security of supply compared to 0 capacity in case of decommissioning)
- Investments for LTE can consist of **combination of investments**, e.g. major overhaul, new gas turbine, by-pass stack, ...
- These different investments can **intrinsically lead to efficiency gains or flexibility increase**, e.g. new burner, new – and more efficient – gas turbine, ...
- Increased efficiency or flexibility should **reduce 'missing money'**

Investments in efficiency gains and flexibility increase linked to lifetime extension should not be excluded as they contribute to ensuring security of supply at lowest cost

1. Investment thresholds and eligibility criteria

Recommendations

- Investment thresholds:
 - Threshold for contract for 3 delivery periods should be set in function of CAPEX for major overhaul
- Eligibility criteria:
 - CAPEX for major overhaul should be eligible to meet the investment thresholds
 - CAPEX for efficiency or flexibility increase shouldn't be excluded if link with lifetime extension



Thanks