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Emission benchmarks revisited – how to fully restore economic incentives in emission trading

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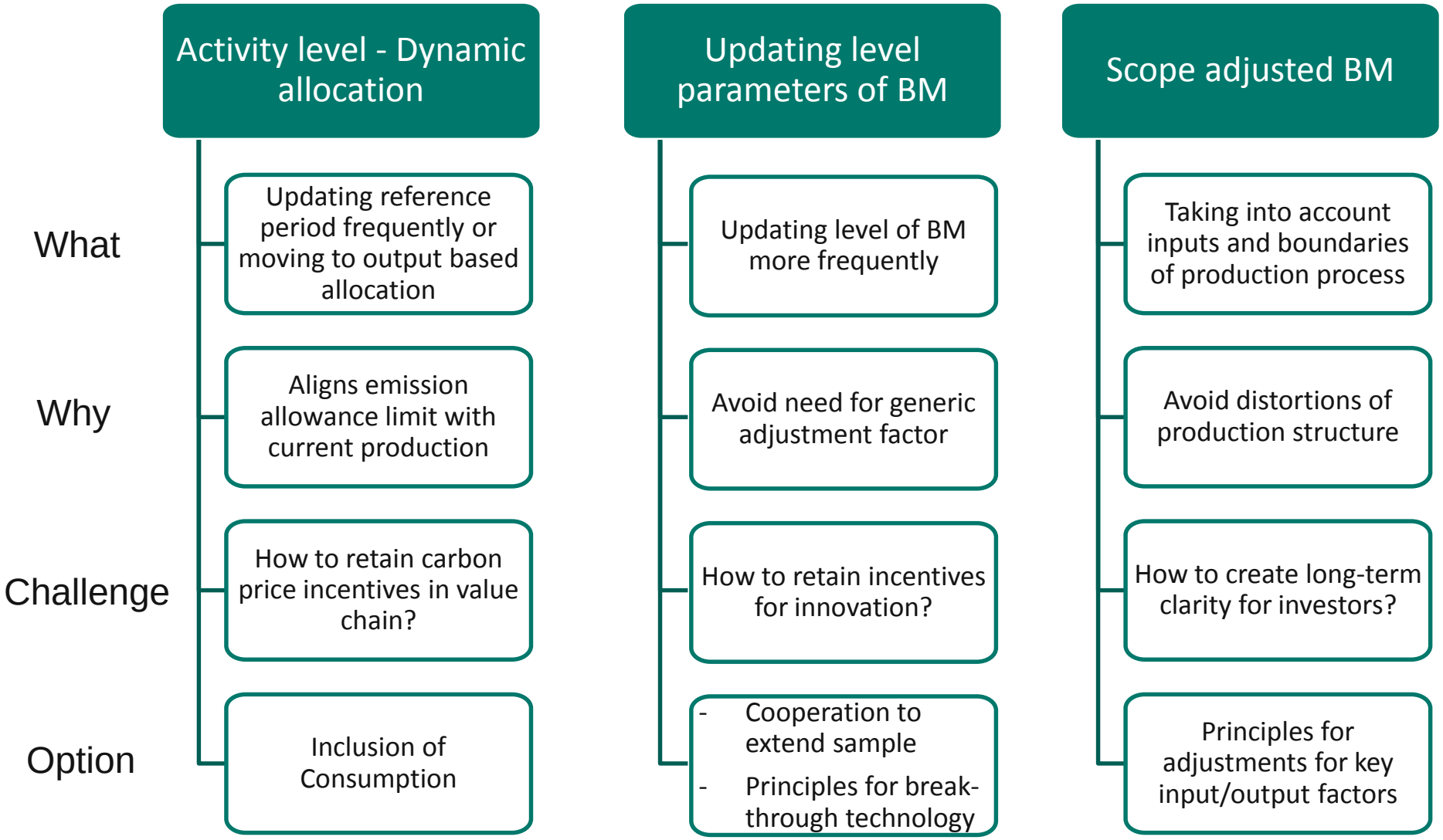
1 Three dimensions on benchmarks for material production



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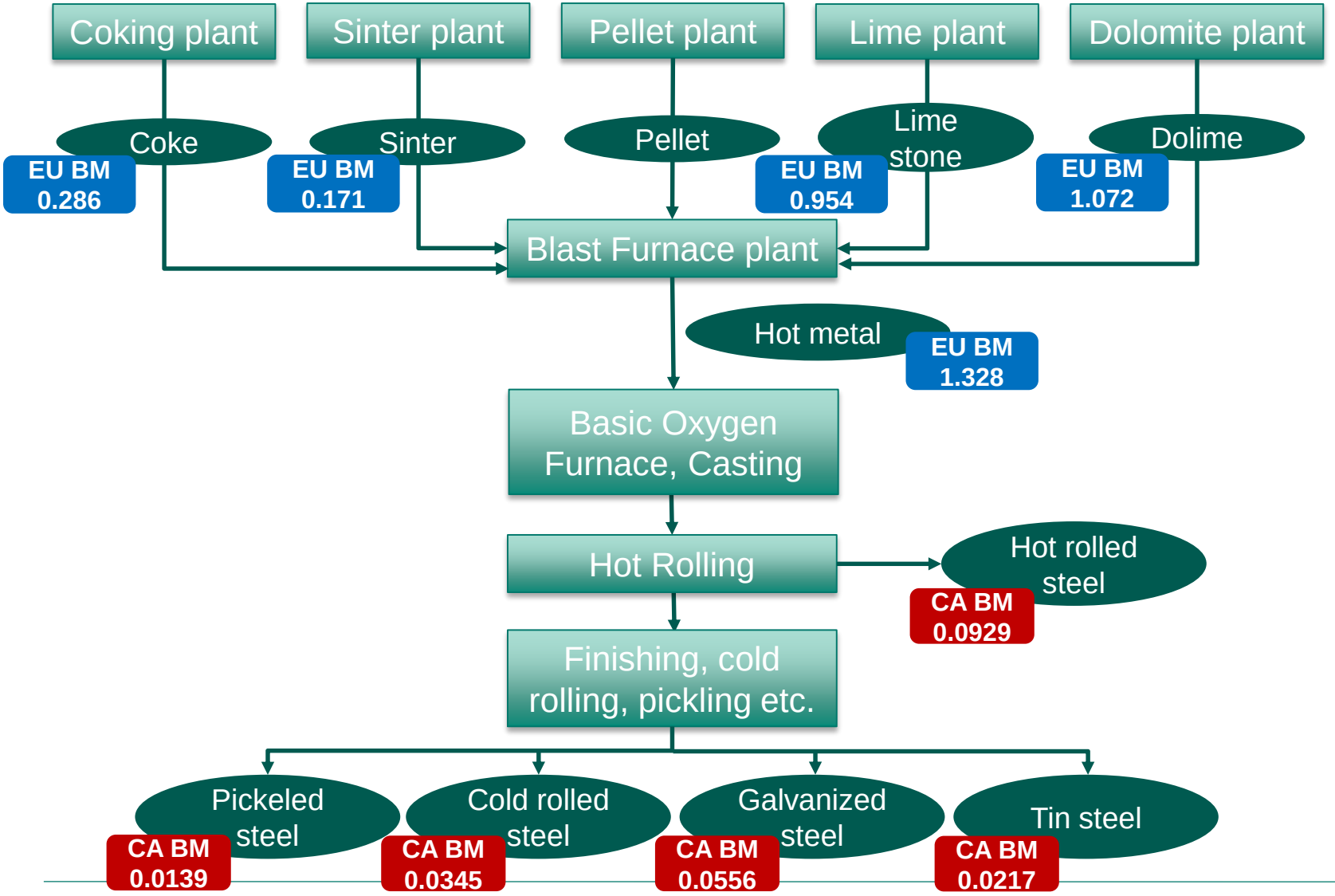
2 Example of Benchmarks in steel production



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3 Framework for emission benchmarks

- Narrow BM vs. On-site BM vs. Braod BM
  - Move away from primarily technical BMs to strengthen economic incentives
- Incentives for efficient input use, material substitution and innovation are currently missing
  - Example: Coking – historic approach gave incentive to outsource coking; dynamic approach does not give incentives for coke saving for sake of emission of coking
- Proposed allocation framework:

$$A_i = Q_{p_i} BM_p - \alpha Q_{m_i} BM_m + Q_{s_i} BM_s$$

Where A_i is the free allocation, Q_{p_i}, Q_{m_i}, Q_{s_i} are the produced product, off-site inputs, desirable by-products respectively, BM_x are the respective benchmarks, α is the share of off-site coking in the total use of coke

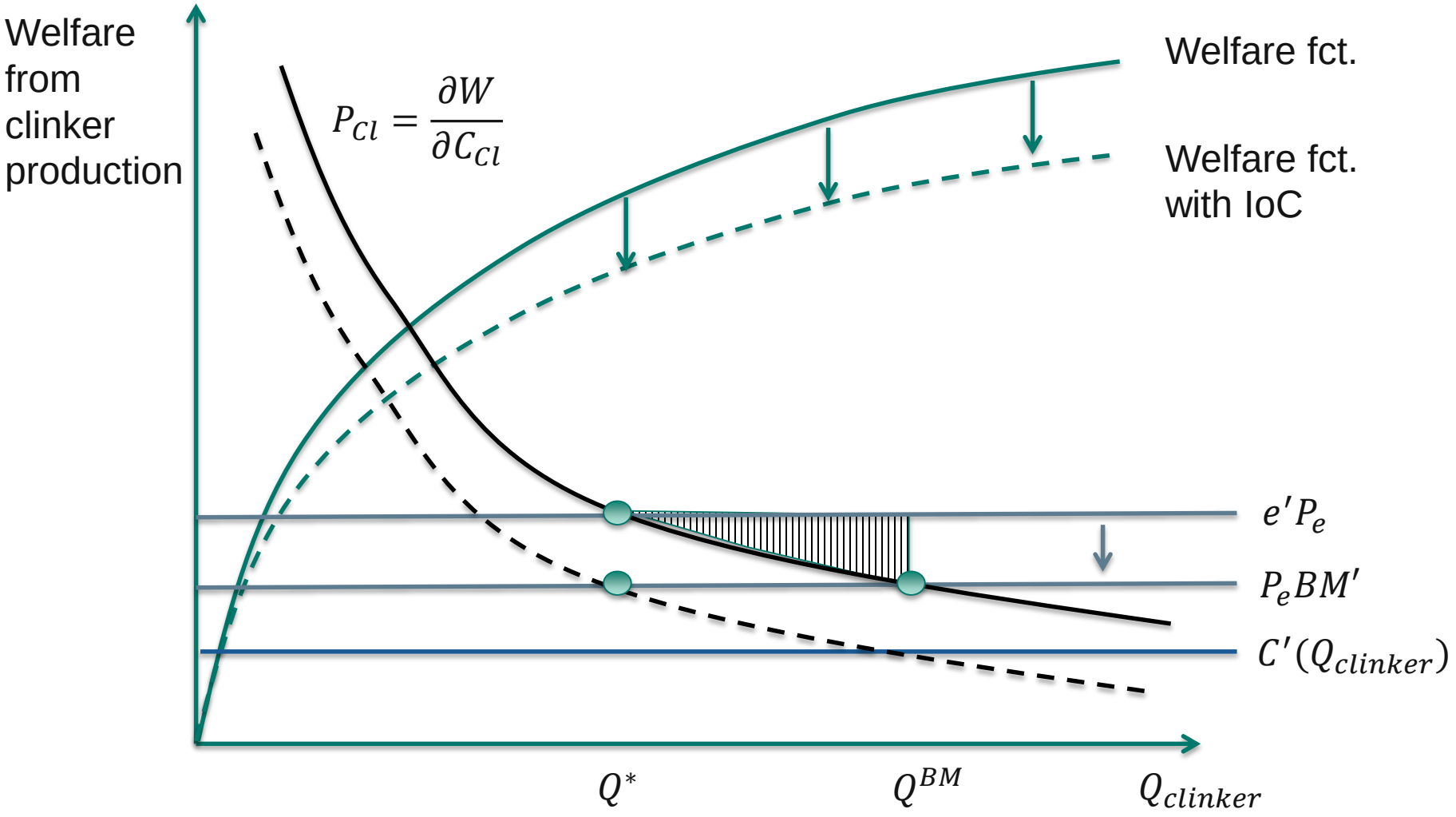
4 Emerging benchmark design principles

1. Give additional allocation for on-site input production if the combined production process is more emission efficient.
2. Give additional allocation for production of by-products if they are desirable goods and the competing producers also receive free allocation (OR cancel free allocation altogether).
3. Do not adjust benchmark allocation for inputs or by-products which do not receive free allocation.

➡ BUT there are remaining inefficiencies

- Radical innovations are not yet fully incentivised

5 Welfare effects of clinker benchmark and consumption charge



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6 Conclusion

If free allocation as carbon leakage protection continued:

- Reinstate carbon price signal for mitigation opportunities with inclusion of consumption of basic materials at benchmark level
- Reflect full carbon-intensity in benchmark, while adjusting for inputs/outputs without carbon price to avoid incentives for off-siting

Challenge: Breakthrough technologies and updating of BMs

- How to avoid being stuck with ‚not improving' technologies
- Co-operate internationally on benchmarks to retain innovation incentives – effect of one innovation on BM becomes smaller
- Diffusion-threshold for when to update BM?

Thank you for your attention.

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