IMPROVEMENT OF INVESTMENT CAPITAL EFFICIENCY

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BACKGROUND

- Projects in the Cement Industry are typically of “CAPITAL INTENSIVE INVESTMENT” nature.

- Characteristically the capital base vs turn over ratio is within the range of 2.5 / 1.

- Key parameter for financing/loaning institutions for project decision is the ROCE (Return On Capital Employed).

- Projects have comparatively long lead times and are often combined with potentially high or increased risks resulting in issues to justify thresholds.

- **The efficient use of CAPEX is based on a successful project definition and has a significant impact the competitiveness of a cement manufacturer.**

THE MAGIC FIGURE: HIGH ROCE

High ROCE is dependent on the following major subjects:

Mainly within company control

- High return of investment (ROI)
- **Low investment project structure => This is the focus of today's presentation.**

Mainly out of company control

- Market and sales growth
- Sustainability

STRATEGIES TO IMPROVE ROCE

Options:

•Improvement of marketing and sales excellence.

• Increase of sales price for cement (depending on market situation).

• Reduction of OPEX (e.g. AFR, ARM, outsourcing, personnel cost, etc.).

• Increase of capacity and volumes.

• CAPEX efficiency.

Covering maximum market positions and capacity with given CAPEX => Lean CAPEX.

CAPEX CATEGORIES

Project related categories

- **Construction of new cement plant (Green field projects).**
- **Debottlenecking of existing plants.**
- **Improvement of productivity (state of the art equipment).**
- **Improvement of CAPEX to Maintain.**

None project related categories

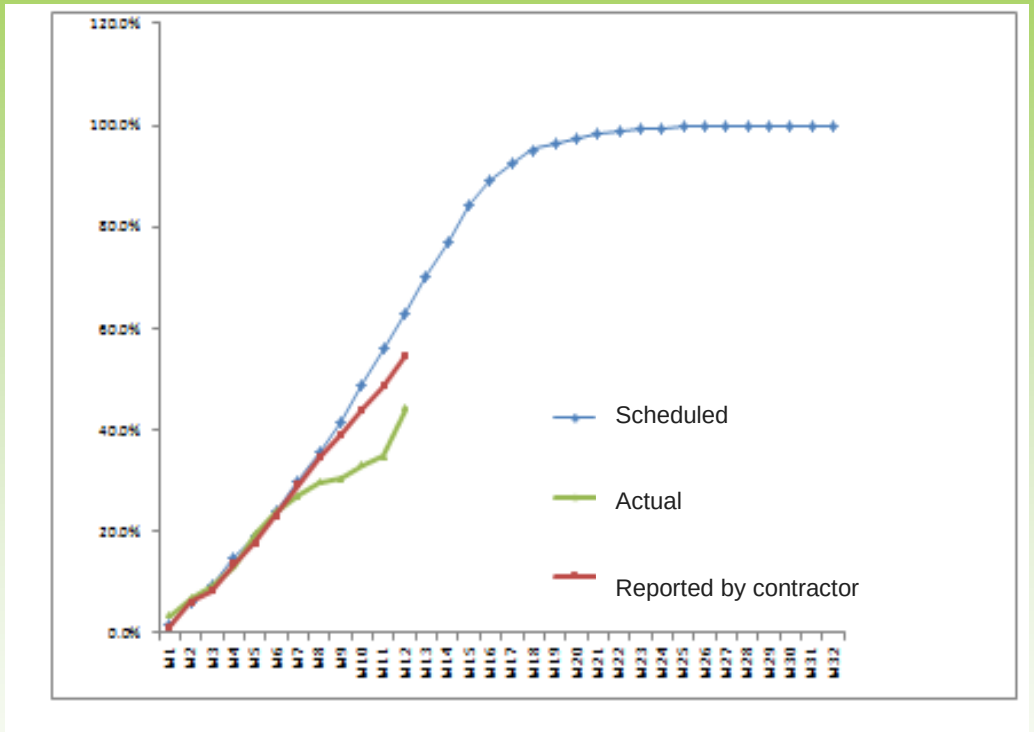
- M&A.
- Increase of working capital.

CONSTRUCTION OF GREEN FIELD PLANTS

CAPEX FOR GREEN FIELD PROJECTS

The Key Indicator: Investment per Tone.

- Accuracy and challenge on strategy (EPC, EP+C, MEPC), scoping, design and costing.
- Lean CAPEX.
- Strong project governance and execution supervision.
- Construction time and ramp up.



CAPEX ACCURACY A CHALLENGE FOR STRATEGY, SCOPING, DESIGN AND COSTING (1/2)

What are the preconditions of a proper CAPEX accuracy?

Evaluate the correct basics: Market and Norms studies, land titles and access, raw materials, energy and utilities, routes to the market, local and climatic understanding, etc.

- **Correct sizing of the plant** (Withstand the tendency to oversize!!!)
- **Hope for the best and plan for the worst:** Elaboration of suitable risk analysis scenarios and contingencies.
- **Fast covering of market area:** Prefer fast, flexible and modular units vs lower cost/t of larger and fixed units. Optimization of cement/clinker factor by additives. Grinding is cheaper than burning. Initially import cement and start branding during project execution.

CAPEX ACCURACY A CHALLENGE FOR STRATEGY, SCOPING, DESIGN AND COSTING (2/2)

- **Evaluated and negotiated special CAPEX impacts:** Financing and permit conditions. Secure and formulize grants, custom waivers, tax breaks, hedging and dept financing.

- **Basic design:** Consider the option of a “strip down” project execution. Ensure that extras, e.g. AFR, storages, etc. are separately calculated.

- **Design according to cost:** Make contractors/suppliers to understand that the ROCE and payback thresholds are to be maintained.

- **Challenge CAPEX value:** Avoid and overcome complexities, unwarranted assumptions and conservatism during design stage of the project. Challenge scoping decisions and de-complexification openly with all stack holders.

LEAN CAPEX

- Utilization common standards and standardized equipment.

- Application of suitable project execution strategy: EPC vs EP+C vs MEPC under consideration of project complexity. MEPC might have potential savings of up to 10 % on equipment. However interface management to be carefully considered.

- Diversification of suppliers manufacturing base. Production out of low cost countries can save up to 30 % of equipment cost but requires professional manufacturing supervision.

- Application of professional contracting with contractors/suppliers can reduce risks and improve guarantees/warrantees. Potential savings 5 % of equipment price.

- Verification of second hand equipment utilization. Potential savings 15 – 25 %.

- Alignment of project team to lean CAPEX. Consideration of meaningful incentives for on time, at quality and on budget execution.

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STRONG PROJECT GOVERNANCE AND SUPERVISION

• Nomination of a Senior Project Manager representing the Owner and integrating all aspects of the project from marketing to logistics to permits to utilities and execution.

• Efficient and monthly meetings of the project steering committee including all key players of the project. All critical decisions to be made and not postponed.

• The mix up of project management (project governance) and site management for days to day execution should be strictly avoided. Project management cares for integration of all project aspects (e.g. design, transportation, claims management, etc.). Site management cares for project execution subjects (e.g. tool box meetings, erection equipment, manpower management, etc.).

•Timely start of selection and involvement of final operation team (with relevant CAPEX allowance). This includes recruitment, training, support from foreign experts, friendly competitors teams, retirees, suppliers , etc..

•Execution of a post project audit to identify and learn for future projects.

DE-BOTTLENECKING OF EXISTING PLANTS

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• Precondition: Existing plants have to be “sold out” and/or plant competitiveness is under pressure. Compared to new plant construction debottlenecking requires only 15-30 % of CAPEX/t.

• Systematic assessment of all components of the plant resulting in identification of options vs cost to achieve improvement of capacity.

• Typical examples:

- Increase of kiln speed and/or gas flow quantity.
- Optimization of clinker cooler efficiency.
- Increase of additive utilization and improvement of clinker/cement factor.
- Utilization of AFR/ARM.
- Import of clinker and increase grinding capacity.

IMPROVEMENT OF PRODUCTIVITY

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- Key to success is low risk source to create high value.
- There are many different categories and technical competence is essential.
- Attractive pay back of < 3 years should be achieved.

IMPROVEMENT OF CAPEX TO MAINTAIN

IMPROVEMENT OF CAPEX TO MAINTAIN (1/4)

High CAPEX to Maintain = High Reliability?

True

False

Low CAPEX to Maintain = High Maintenance and OPEX?

True

False

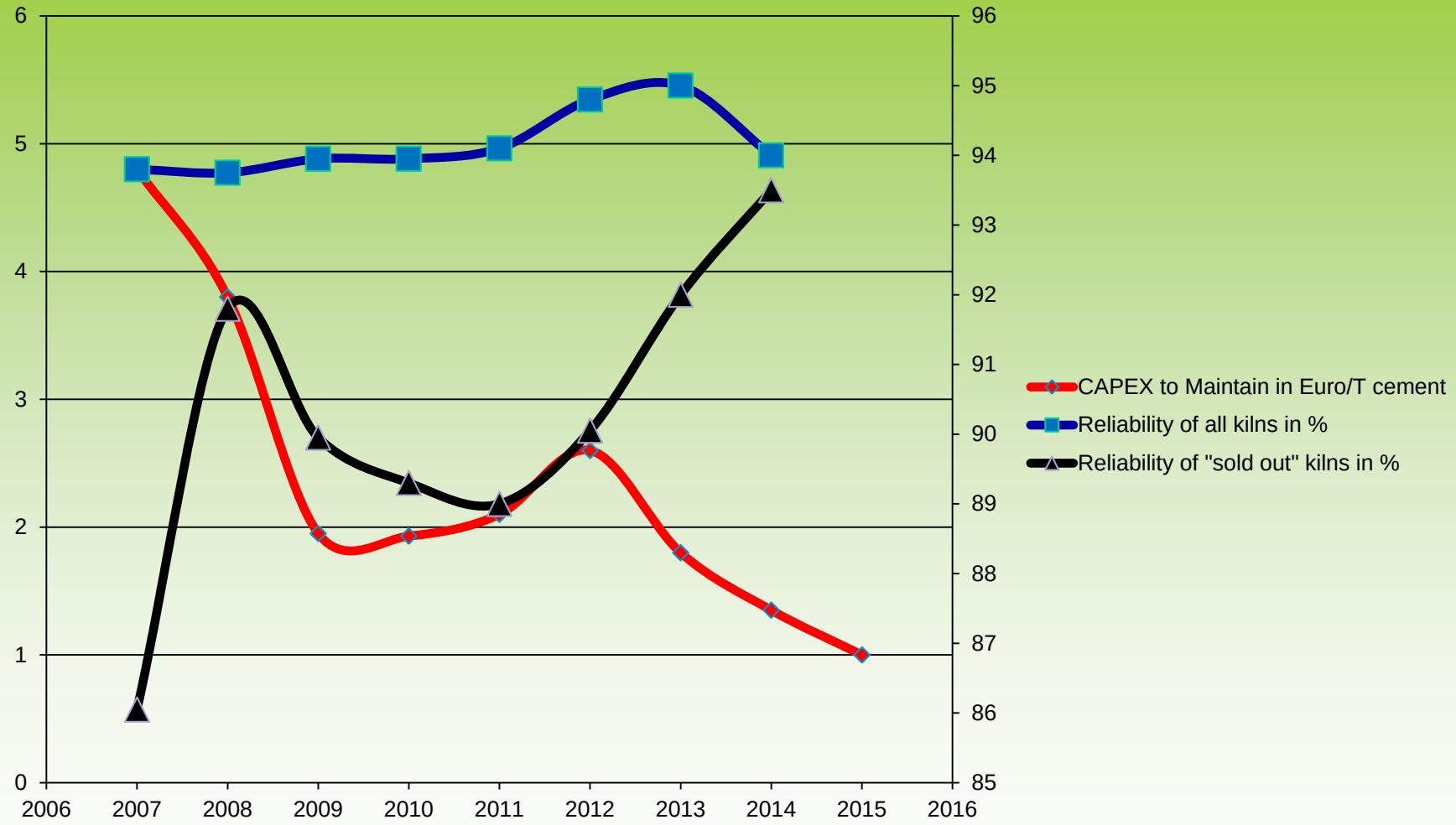
% Appreciation + % Amortisation = Good CAPEX to maintain KPI?

True

False

Are these golden roles still true?

PLANT RELIABILITY VS CAPEX TO MAINTAIN (2/4)



PLANT RELIABILITY VS CAPEX TO MAINTAIN (3/4)

- Recent evaluations indicate that reduction of CAPEX to maintain resulted in:

  - reduction of CAPEX to Maintain cost from 4-5 Euro/T to below 2 Euro/T.
  - no decrease of kiln reliability of all kilns investigated,
  - increase of kiln reliability of “sold out” kilns.

However: A backlog of CAPEX to Maintain might be triggered by constantly reduced CAPEX to Maintain.

With CAPEX to Maintain figures of below 2 Euro/T preventative maintenance is hardly possible.

The truth might be somewhere in the middle.

PLANT RELIABILITY VS CAPEX TO MAINTAIN (4/4)

• CAPEX to Maintain is essential for plant integrity, compliance, reserves but 4-5 Euro/T are too high considering today´s intelligent sourcing of spare and replacement parts.

• Reduction of CAPEX to Maintain triggers the following side effects:

- Focus on less projects = Less disturbing impact on production systems.
- Increased acceptance of risk and focus on business vs technical KPI.
- Doing more with less. Greater creativity to overcome problems.
- Reconsidering of over stretched compliance.
- Increase of sourcing portfolio (Low cost countries).
- Drives innovations (e.g. intelligent outsourcing).

• Reduction of CAPEX to Maintain forces plant management team to refocus on maintenance systems and practices:

-Increased conditioning and monitoring.
- Reduction of new vs repaired parts.
- Less interventions and better planning of shutdowns.

CONCLUSIONS

- **CAPEX efficiency is the main differentiator/source of competitive advantage.**

- **Important is prioritization on of low risk/high return projects as well as debottlenecking and increase of productivity projects.**

- **Reduction of CAPEX to maintain by intelligent measures should be a major focus. Target should be in the range of 2 Euro/T.**

- **There are strategies to reduce CAPEX of new plant projects by benchmarked, disciplined and challenged planning. Target should be to reduce CAPEX by 25-30 % compared to historical values.**

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CEMCON AG AS PARTNER OF THE CEMENT INDUSTY IS COMPETENT AND EXPERIENCED TO SUPPORT YOU IN ANY CAPEX EFFICIENCY EFFORT.

THANK YOU VERY MUCH FOR YOUR KIND ATTENTION

WE GLADLY WILL ANSWER YOUR DETAILED QUESTIONS AT INDIVIDUAL DISCUSSIONS. JUST CONTACT US.