Execution of a cement project from A-Z

Per Mejnert Kristensen
VP, Head of Project Division EMEA/APAC, Cement
Agenda

- Introduction
- Long term trends in the global cement industry
- FLSmidth’s role in a cement project from A-Z
- Uncertainties and risks in execution of cement projects
- Outlook in Cement
Per Mejnert Kristensen

- VP, Head of Project Division EMEA/APAC, Cement

- Joined FLSmidth in 1992

- Positions in FLSmidth:
  - VP, Head of Project Division EMEA/APAC
  - VP, Head of Project Division 1
  - General Manger, FLSmidth China
  - Chief Representative Thailand
  - Ass. Site manager, 10,000 tpd project, Thailand
  - Project Sales
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Long term trends

- Growing need for cement remains despite current global crisis!
Expected future average:

~ 60-75 mty

2009E:
25-50 mty

Contracted kiln capacity is an indicator of total cement capital investments. However, the kiln system only accounts for around 25% of the value of a cement production line and additionally, the lifetime of a kiln is generally longer than the other equipment.
Long term trends

- Growing need for cement remains despite current global crisis!
- Emerging markets will continue to be the driver - now also Africa
Geographical distribution of new global contracted cement kiln capacity (excl. China)
Long term trends

- Growing need for cement remains despite current global crisis!
- Emerging markets will continue to be the driver - now also Africa
- Cement kiln sizes growing
History of kiln capacity development

**Wet kilns**
- 1892: 1.8x18 m
  - 35 tpd
- 1967: 7.6x232 m
  - 3500 tpd

**Preheater kilns**
- 1970: 6.0x96 m
  - 4000 tpd

**Precalciner kilns**
- 1984: 5.0x80 m
  - 5500 tpd
- 1990: 6.0x96 m
  - \(\geq 10,000\) tpd
- 2006 →: 6.6x93 m
  - \(\geq 12,000\) tpd
Cement kiln sizes continue to grow
Cement kiln sizes continue to grow

Average plant clinker capacity (t/d)

Year
Long term trends

- Growing need for cement remains despite current global crisis!
- Emerging markets will continue to be the driver - now also Africa
- Cement kiln sizes growing
- Increased environmental focus
Half of the fuel used in German cement plants is alternative fuel

Alternative fuel energy coverage in %

Rapid increase in alternative fuel usage during the past 5 years
- due to focus on lowering production costs in a cement market with excess production capacity
Increased focus on emissions

Going from here 😞

To there 😊
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A cement plant from A to Z

- Feasibility study
- Proposal stage and signing of contract
- Design and order handling stage
- Civil design and construction
- Erection, start-up,
- Commissioning, handover, guarantees
- Production, operation and maintenance of the plant

Customer requirements

FLSmidth strengths and capabilities
Feasibility stage

Market size, cement prices, investment costs?

Budget proposals for various sizes
Proposal stage and signing of contract

Tender requirements on main features or technical specialities

Leadtime as a consequence of requirements

Contract

24 mth

Basic plant

Adapted plant

Taylor made
Proposal stage and signing of contract

- Raw material samples to FLSmidth
- FLSmidth tests the raw materials
- R&D and test centre in Denmark and India
Proposal stage and signing of contract

Optimal process and low production cost

Advanced process design

FLSmidth has in house laboratory with all modern testing facilities.

FLSmidth is constantly increasing investments in research and development

FLSmidth process designers are carrying a heritage of more than 100 years of experience and know how.
Proposal stage and signing of contract

Can we get the complete package from FLSmidth?

FLSmidth has equipment for the entire process.

Main machines & auxiliary equipment of FLSmidth design

Electrical equipment

Vendor equipment
Proposal stage and signing of contract

Local supply and manufacturing

FLSmidth offers split-supply

40% imported
60% local manufactured
Proposal stage and signing of contract

What are the total cost?

Typical cost composition

- Buildings: 30%
- Machinery: 40%
- Erection: 15%
- Transport: 5%
- Supervision: 5%
- Others: 5%
Proposal stage and signing of contract

Different options are possible

Equipment, civil design or turnkey?

Equipment

Construction

Civil design

Erection
Proposal stage and signing of contract

Finding the right site information?

All information sources are used such as Google Earth etc.
Proposal stage and signing of contract

Visualisation to customer

3D layouts and models
Proposal stage and signing of contract

Visualisation to authorities

3D layouts incorporated in actual landscape
Proposal stage and signing of contract

- Signing the contract
- Quick order start
Design and order execution

Safe order handling

A strong project team

Experience + skills + tools
Design and order execution

Security in a changing world

Company size and strengths in market

Customer

FLSmidth

Long track record
Global presence

Buying power
Supply chain
Vendor relations
Design and order execution

Close contact to the supplier

World wide design

Global design centres
design 24 hours a day
Design and order execution

Fast civil design

Integrated technical and civil design
Manufacturing, inspection and expediting

High quality equipment

Close co-operation with large workshops
Shipping

Safe transport

Odd-size equipment or in containers
Construction and installation

Swift and trouble free construction and installation

Experienced and skilled supervisors
Training of client’s staff

- Training of staff
- FLSmidth Institute - good training programme
Commissioning, handover and guarantees

A swift start of the plant

FLSmidth has a good record for reaching all guarantees

![Graph showing the progress of production versus design capacity with specific notes on start-ups and stoppages.](Image)
Operation of the plant

A safe and economical operation of the plant

FLSmidth offers full operation and maintenance
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Factors contributing to uncertainty about project income

- Progress of ongoing projects
  (to be addressed in following slides)

- When will signed LoI’s and non-effective contracts materialise?

- General market outlook very uncertain these days!

- Even though our customers want to move ahead with projects, they are met by financing constraints,
  - *i.e. not even our customers can tell when they will be able to go ahead!*
Typical project progress and income recognition

- **Down payment**
- **Letter of Credit**
- **Engineering**
- **Procurement**
- **Manufacture**
- **Shipping**
- **Installation**

Period of execution:
- 1st
- 2nd
- 3rd
- 4th
- 5th
- 6th
- 7th
- 8th
- 9th
- 10th
- 11th
- 12th
- 13th
- 14th
- 15th
- 16th
- 17th
- 18th
- 19th
- 20th
- 21st
- 22nd
- 23rd
- 24th
- 25th
- 26th
- 27th
- 28th
- 29th
- 30th (PAC)
Typical project progress and income recognition

- Down payment
- Letter of Credit
- Engineering
- Manufacture
- Shipping
- Installation

Period of execution:
- POC
- Net Sales
- CM
- SG&A
- EBIT
Risks in execution of a cement project

- Delayed supplies from vendors
- Client not ready to receive goods or formalities not in place (e.g. BTI)
- Client wants to postpone project
- Suspension of project due to “temporary” problems with financing
- Termination of project due to client’s inability to continue

*All of the above creates uncertainty about timing of income recognition...*  
*...and just a few months delay around New Year can impact the annual result significantly!*
Typical project cash flow

-20% -10% 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th 28th 29th 30th (PAC) 31st

Period of Execution

-20% -10% 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Client payments
Total Project Cost Payments
SG&A payments
Net Cash

Capital Market Day 2009
What happens when orders are cancelled or put on hold?

- **“Cancelled”**
  - Initiated work and issue of purchase orders stop
  - Legal department gets involved
  - We stick to our contractual rights - no matter which client
  - We have the right to be compensated for incurred and committed costs and as well as a pro-rata contribution margin
  - Cancellation fee to be claimed

- **“Put on hold”**
  - Initiated work and issue of purchase orders stop
  - Contract and time schedule is amended
  - We preserve the right to be compensated for any additional costs
  - Some clients are constrained on cash, others are adjusting priorities
Status of our existing cement project portfolio

- Overall approx. 10% of order backlog currently on hold.
- 3 - 4 major projects are partly suspended
  - no major cement projects cancelled so far (but some minor)
- We are in very close contact with the customers and they are all determined to carry on – but limited by financing
- Recent events on (partly) suspended contracts:
  - Receipt of progress payment – strong indicator of commitment
  - Agreement on prolonged delivery schedule
  - Agreement on finalising engineering but procurement on hold for a specified period
- At this stage we thus feel relatively confident about our existing cement project portfolio – but timing still uncertain
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Strong belief in future prospects, because:

- We have the strongest brand in the market!
- We have a global reach – present in every corner of the world!
Global undertaking with a local presence
**Strong belief in future prospects, because:**

- We have the strongest brand in the market!
- We have a global reach – present in every corner of the world!
- We have a complete product portfolio!
Holcim Ste. Genevieve
The world’s first 12,000 tpd single kiln line
Strong belief in future prospects, because:

- We have the strongest brand in the market!
- We have a global reach – present in every corner of the world!
- We have a complete product portfolio!
- We have an unsurpassed reference list!
FLSmidth has built ~2000 cement kilns worldwide since 1898.
Strong belief in future prospects, because:

- We have the strongest brand in the market!
- We have a global reach – present in every corner of the world!
- We have a complete product portfolio!
- We have an unsurpassed reference list!
- We are investing most in R&D!
The cement industry’s largest R&D centre
Strong belief in future prospects, because:

- We have the strongest brand in the market!
- We have a global reach – present in every corner of the world!
- We have a complete product portfolio!
- We have an unsurpassed reference list!
- We are investing most in R&D!
- We are the strongest Group – Cement & Minerals

We are very well positioned for the future!
Questions