COVID-19: Global Cement Markets
Asia Focus and Plant Operations

Thomas Armstrong
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International Cement Review
Agenda

• **Overview and Introduction**: Thomas Armstrong, ICR (UK)

• **Global Market Outlook**: Paul Roger, MD, Building Material Division, Exane BNP Paribas (UK)

• **Asian Industry Outlook**: Manas Tamotia, Partner, LEK Consulting (Singapore)

• **Plant Operations and COVID-19 Response**: Jens Peter Koch, Sales Director – Europe, FLSmidth (Denmark)

• **Global Energy Markets**: Frank Brannvoll, Managing Director, Brannvoll ApS
COVID-19: Timeline and current status

Coronavirus disease (COVID-19) outbreak situation

Timeline

• 17 November 2019: first case
• 23 January: China lockdown imposed (Wuhan)
• 9 March: Italy lockdown starts
• 11 March: WHO declares pandemic
• 14 March: US lockdown
• 8 April: China lockdown lifted in Wuhan (76 days)
• 15 April: **213 countries with cases**
• **+44k deaths since last week**
COVID-19: deceleration?

Confirmed cases: 2,402,250
Deaths: 163,097

Source: World Health Organization
COVID-19: yet to fully impact on emerging markets in Africa and Asia?

Case Comparison
WHO Regions

- Europe: 1,187,184 confirmed cases
- Americas: 893,119 confirmed cases
- Eastern Mediterranean: 138,674 confirmed cases
- Western Pacific: 134,510 confirmed cases
- South-East Asia: 32,496 confirmed cases
- Africa: 15,555 confirmed cases

Impact on economic growth: IMF Forecast (14 April)

- Lockdown and social distancing: economic paralysis
- Launch of massive economic rescue packages: US$8trn in big western economies alone
- Far exceeds scale of the rescue measures taken in wake of 2008 financial crisis: complex, global, uncertain

- **Amounts to IMF expects global economy to shrink by 3% this year**, vs January forecast of 3.3% expansion.
- **USD9trn: cumulative loss of output over 2020-21 (IMF)**
- Worst economic downturn since the Great Depression

- Advanced economies to shrink by 6.1%: US -5.9%; Euro area -7.5%
- Emerging markets: limit fall to 1 per cent
- China and India will still expand, but Russia will fall (-5.5%)

- Least impact in Emerging and Developing Asia
- IMF anticipates a ‘V’ shaped recovery: 5.8% expansion in 2021 – credible?
Industry response

- Visibility is still poor as the virus continues to move through the world
- Many markets seeing impact from March and April
- Peak of downturn is likely to span March-May
- Plants winding down operations in response to demand contraction and in line with government instructions
- Some have moved forward their annual maintenance programmes
- Focus is on health & safety, managing cash, reducing costs
- Readiness for return to business is paramount: engaging with authorities, demonstrating ability to secure health and safety of workers, communities and wider stakeholders
Cement markets were making a solid start to the year

YTD cement volume change, compared with previous year (as reported Apr '20)
Regional perspectives – ICR survey

CHINA

• FY19 demand was 2.32Bnt (+4.8%)
• 1Q2020 demand (Jan-Mar): -24%
• FY2020e: -2%/-4% (worst case if second lock down: -8 per cent)

• Lockdown from 23 Jan to 8 April: lifted after 76 days
• Coincided with the Spring Festival (holiday period, traditionally low level of activity for cement sector)
• Most of construction sector suspended in the first quarter: construction and cement sectors resumed in late March.
• Anhui Conch, China’s 2nd largest producer (353Mta capacity) reported activity at 96.6 per cent
• West China Cement (30Mta capacity) reported 90% capacity utilisation and relatively stable prices
• Lessons: sales resumed slowly, prices fell (-10%). It takes weeks to reactivate supply chain (raw materials such as coal and gypsum), reposition workers.

• 1H2020: 6-8 per cent decline YoY in cement volumes (CCA estimate)
• Industry anticipates a huge investment in infrastructure to support cement demand in 2H2020.
• FY2020 forecast: fall in demand will be limited to just 2 per cent, assuming no second wave of virus.
• The sector is optimistic that no plants will close directly as a result of COVID-19 pandemic.
Regional perspectives – ICR survey

INDIA (1)

- **FY2019**: 336.5Mt (+3%)
- **1Q2020 (Jan-Feb)**: +6.8%
- **FY2020e**: -7-10% (worst case if lock down extended to 2Q20: -25%)

- **Robust growth trajectory derailed**
- Nationwide lockdown from 25 March; extended until 3 May.
- **Construction sector standstill during the typical peak of consumption.**
- Lockdown saw exodus of labourers from construction sites paralysing construction
- Cement sector: suspended operations to comply with lockdown; **no production between 25 March – 20 April**
- 20 April: plants permitted to operate, as per Ministry of Home Affairs directive for continuous process industries
Regional perspectives – ICR survey

INDIA (2)
• FY2019: 336.5Mt (+3%)
• 1Q2020 (Jan-Feb): +6.8%
• FY2020e: -7-10% (worst case if lock down extended to 2Q20: -25%)

• However: construction has not yet resumed and there is an accumulation of stocks worth up to two months of demand.
• Post lockdown recovery: 15 days required to restore operations and for labour to return
• **Restarting logistics** is immediate challenge (permitting, controls), as well as opening up of construction sites and dealer networks.
• Industry is developing a set of COVID-19 compliance guidelines governing employee safety - **Standard Operating Procedures (SOP)**: requires self certification (social distancing, sanitation, hygiene etc)
• Regional variation: some states such as Goa have been declared COVID-free
• **Meaningful demand recovery delayed until after monsoon (Jun-Sept)**
Regional perspectives – ICR survey

PAKISTAN

- **FY2019**: 41.4Mt (+0.9%)
- **1Q2020 (Jan-Mar)**: +4.4% (Mar: -17%)
- **FY2020e**: -12.5%

- **Strong demand recovery derailed.**
  - Partial shutdown since late March: some plants continued to operate, selling mostly to dealer networks/projects
  - 14 April: Government of Pakistan allowed national dispatch of cement and phased reopening of construction activities (with social distancing).
  - Other sectors remain in lockdown until 30 April.
  - PSDP-related projects (public projects) will be resumed by federal government authorities, supporting a swift uptake in this segment of the market.
Regional perspectives – ICR survey

VIETNAM

- **FY2019**: 64.3Mt (+0.6%)
- **1Q2020 (Jan-Mar)**: -2%
- **FY2020e**: -3-5%

- **Relatively low economic impact in Vietnam**: only 268 cases and **no confirmed deaths** (20 April)
- Gradual containment since January resulting in national social distancing between 1-15 April; extended to 22 April in 12 high risk cities, including Hanoi
- Fiscal support package: VND226trn (3% of GDP)
- GDP growth at +3.82% in 1Q20 vs +6.79% in 2019
- Construction project postponed, but limited overall slowdown (est. -15%)
- **Few cement plant closures (15%); main impact is reduction in output**
  - Domestic consumption in 1Q20: -2%
  - Exports in 1Q20: 7.5Mt (-39.8% YoY)
- **FY2020e**: decline in consumption limited to 3-5 per cent. Exports volumes to fall 10-15 per cent. No plant closures anticipated due to COVID-19.
Conclusions

• So far, wide range of market behaviour, ranging from no impact yet, to complete stand still.
• Pandemic to peak in 2Q20 when volumes and prices likely to see most severe declines.
• 3-6 month severe disruption depending on local conditions.
• 2H2020 rebound, assuming no second wave
• Global demand to collapse by 7-10%, but falls will be unevenly distributed, with some countries more resilient than others.
• Yet to fully understand impact of pandemic in many emerging countries – outlook could deteriorate substantially
Global market outlook:
Paul Roger
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Asian industry outlook:  
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Partner  
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Managing Director
Brannvoll ApS
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BUILDING MATERIALS

The outlook for global cement markets
Building Materials team

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Agenda

- What will Covid-19 mean for cement demand?
- Will pricing hold?
- What can the industry do to protect cash flow?
- Don’t forget sustainability

What a difference a few month makes...

... 2020 cement volume scenario, Cemtech Dubai, February 2020

Source: Exane BNP Paribas estimates
Lockdowns will write-off much of 2020

1) Over a third of the world is in lockdown. This is an unprecedented disruptive experience
2) Not all lockdowns are the same (nationwide, regional, strict, social distancing) and construction is often deemed an essential service
3) We expect a big impact on activity in most end-markets and show a typical scenario

Not all lockdowns are the same…
- Strict (Europe, India, Ecuador) vs loose (Sweden)
- National vs regional (US, Brazil, Nigeria, Indonesia)
- Is construction an essential service?

… but there will be a big impact everywhere
- Social distancing creates operational challenges
- Companies prioritise health & safety
- Customers are also disrupted

Disruption could last a long time
- Some markets are re-opening (China, Austria)…
- … but response is typically phased
- No permanent solution until a vaccine (mid 2021?)

All end markets are likely to be hit
- We assume disruption for 10 months post lockdowns
- Private construction most impacted
- Infrastructure and renovation unlikely to be immune

Source: Exane BNP Paribas estimates
Our scenario for 2020 cement consumption growth

1) Lockdowns will write off much of 2020
2) We expect a global impact from lockdowns (DM) and global recession (impacting EM)
3) Significant downside risks in many EMs that have not yet been as directly impacted (poor health care, dense population). Spanish Flu hit EM hard

We expect cement demand to be significantly impacted this year
Cement consumption 2020e
What shape will the recovery take?

1) The shape of a recovery will depend on economic scarring, the fiscal response and whether the virus returns or mutates
2) We see U shaped recovery as most likely, with a W shape also plausible
3) Debt and confidence overhangs make a V shape unlikely, whereas fiscal stimulus should protect against an L shape

V shape (most bullish)
- Confidence, jobs, investment bounce back
- Lots of pent up demand
- No scarring or virus return

U shape (most likely)
- Slower recovery at shallower pace
- Some scarring (debt, confidence overhang)
- No virus return

W shape (plausible)
- A V shaped response initially
- No scarring
- Then the virus returns

L shape (most bearish)
- Slow recovery in jobs, confidence and activity
- Deep scarring
- No virus return

Exane BNPP macro forecasts integrate more of a V-shape than the team’s bottom up scenario

Exane BNPP 2020 GDP forecasts

<table>
<thead>
<tr>
<th>% annual growth</th>
<th>2020e</th>
<th>2021e</th>
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<td>New baseline</td>
<td>Previous</td>
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</table>

* Using IMF, PPP weights

Source: Exane BNP Paribas estimates
The fiscal response

1) Most governments have been big, bold and decisive. Stimulus measures range from nationalising the workforce to tax cuts and loan guarantees
2) The sums involved are huge and in many cases unprecedented. But it isn’t all going on infrastructure...
3) It is hard to see the public accepting a return to austerity when this is over. Low interest rates will support higher debt for longer, esp in DMs

Government response to the crisis so far has been strongest in the US and Australia
Fiscal stimulus as % of GDP

Source: Exane BNP Paribas estimates
A world of higher debt

1) The world has been addicted to debt for almost 20 years...
2) ... and we are still paying off debt from the global financial crisis
3) The COVID-19 pandemic and fiscal response just adds to the burden. This poses a real challenge for EMs (higher interest rates, weaker currencies)

The world had too much debt even going into this crisis
Gross government debt as % of GDP, 2020e

Source: IMF
Lower oil prices will take their toll

1) Oil prices are falling because of a toxic combination of weak demand (COVID-19) and price wars (OPEC/Russia vs US)
2) This will add to the financial strain in some regions (MEA, Latam) but should act as another stimulus in some markets (DM, Asia)
3) Prices for other commodities could also fall hurting exporting markets (eg palm oil Indonesia)

Lower oil prices could impact GDP in many EMs outside Asia
Net oil exports (or imports) multiplied by a US10/barrel oil price reduction as a % 2019e

Source: Exane BNP Paribas estimates
Our scenario for 2021 cement consumption growth

1) Visibility on 2021 is very low
2) We integrate a U-shaped recovery with pedestrian growth
3) China’s bounce-back gives scope for more optimism?

We expect little recovery in most markets in 2021

Cement consumption 2021e

Source: Exane BNP Paribas estimates

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FX and cost inflation are also impacted

1) Reserve currencies like USD and safe havens such as CHF are rallying. EM currencies are falling, especially in oil economies
2) Weak EM currencies create inflationary headwinds…
3) … offsetting some of the benefit of lower input costs

Many important EM currencies have weakened this year
Index vs. US Dollar, 31/12/2019 = 100

Energy prices are coming down
Gas and Coal prices, YoY % change

Oil has fallen dramatically
Brent crude oil FOB, YoY % change
How will pricing hold?

1) Overcapacity, market fragmentation, Chinese expansion overseas and imports posed challenges even before COVID-19
2) Utilisation rates are set to fall further this year as new capacity comes on (especially in EM) and demand drops
3) Customers know input costs are falling

Low utilisation rates expected across most markets this year

Utilisation rates 2020e

Source: Exane BNP Paribas estimates
Pricing power is likely to be weak

1) We don’t expect price increases to offset cost inflation in many markets
2) We see firm pricing in US but general EM weakness
3) Big question marks in Europe. The majors pushed at the start of 2020 but lower CO2 costs plus falling utilisation rates are unhelpful

Pricing power seen in the US with weakness some EM markets
Prices 2020e

Source: Exane BNP Paribas estimates
Pricing power is likely to be weak

1) We don’t expect price increases to offset cost inflation in many markets
2) We see firm pricing in US but general EM weakness
3) Big question marks in Europe. The majors pushed at the start of 2020 but lower CO2 costs plus falling utilisation rates are unhelpful

Gross margins will be eroded across markets outside of the US and Europe

Gross margin 2020e (price increase – total cost inflation)

Source: Exane BNP Paribas estimates
What can cement producers do to protect cash flow?

1) Expect a range of cost cutting, lower investment, working capital release and dividend cuts for listed companies
2) Positive = less debt than in 2008
3) Negative = capex and working capital are already quite lean, suggesting less scope to cut

**European heavyside names are in better shape...**

Net debt/EBITDA (market-cap weighted)

...while capex is at relatively low levels

Capex as % of sales (market-cap weighted)

Source: Exane BNP Paribas estimates
Don’t forget sustainability

1) Sustainability was THE hot topic before COVID-19 and hasn’t gone away
2) Europe is already taking about the need for a “Green recovery”
3) CO2 prices are falling now… but they will rebound medium term. Cement companies still need to take action

Cement is responsible for 9% of ETS emissions in Europe

% of ETS emissions by sector
Conclusions

2020 is a write-off year in most markets
  > Lockdowns plus indirect impacts to hit demand
  > A question over whether pricing will hold
  > The industry will focus on protecting cash flows

Questions for 2021 too
  > The virus could leave “scarring” and may even come back
  > Debt overhang and government’s prioritising social security / credit rather than traditional infrastructure stimulus…
  > … but our Economists are more optimistic and China gives some positive signals

Sustainability should remain central to medium term planning
  > Many governments are talking about a “green recovery”
  > Lower CO2 prices and EU focus on other matters will only delay new pressures
  > The industry will need to work hard to cut manufacturing emissions (AFs, process improvements, etc)
  > Time to experiment with other solutions: Circular Economy, new products, CCSU, chemicals

Thank you!

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Pre covid-19

Makati Ave and Ayala Ave intersection, Manila, Philippines

Source: Getty Images
The covid-19 world

Makati Ave and Ayala Ave intersection, Manila, Philippines (21 Apr 2020)

Source: Google Maps
Even prior to the outbreak of covid-19, Southeast Asian cement markets were challenged with overcapacity; except in the Philippines

Southeast Asia cement supply-demand dynamics (2019)
Millions of tons

Source: SCG; Global Cement Report; L.E.K. research
Consequently cement prices were low and generally declining

Average ex-factory prices by Southeast Asian markets (2015; 19)
USD per ton at constant exchange rates

Source: SCG; L.E.K. research
However the demand outlook across Southeast Asia was robust suggesting a “better future”

Construction demand growth forecast by country (2019-24F)
CAGR %

<table>
<thead>
<tr>
<th>Country</th>
<th>2019-24F CAGR %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
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<td>Vietnam</td>
<td>6.9</td>
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</table>

Source: BMI
The covid-19 crisis is (relatively) in its nascent stages in SEA

**Low rates of nCoV infections**

**Confirmed cases, by number of days since 100th case**
(As of 19 Apr 2020)
Cumulative number of confirmed cases (‘000)

**Few deaths due to Covid-19**

**COVID-19 mortality**
(As of 19 Apr 2020)
Number of deaths per million population

Note: *Japan’s case count does not include 705 COVID cases from the quarantined British-registered Diamond Princess cruise liner outside Tokyo*

Source: John Hopkins University COVID-19 Resource Center
Since international trade is a very large part of Southeast Asian economies…

The covid-19 world

Trade as a proportion of GDP (2018)

Source: World Bank
..as the world closed, manufacturing in Southeast Asia began declining early

Slowdown in manufacturing activity in major Southeast Asian countries (Feb-Mar 2020)
Manufacturing PMI*

Note: Purchasing Managers’ Index. A PMI above 50 represents an expansion when compared with the previous month. A PMI reading under 50 represents a contraction, and a reading at 50 indicates no change.
Source: Trading Economics, L.E.K. research and analysis
Hospital infrastructure in Southeast Asia is limited

Source: WHO

Hospital beds supply in selected countries
(Last available year)
Number of beds per 10k

Source: WHO
Therefore Governments in SEA have taken aggressive lockdown approaches to limit spread of disease; Indonesia is an exception

**Government restrictions in response to covid-19**
**(As of 21 Apr 2020)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
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<tbody>
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<td>Singapore</td>
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<td>Philippines</td>
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</table>

- **Vietnam**: Schools closed
- **Malaysia**: Movement control order i.e., lockdown
- **Indonesia**: Partial lockdown limited to select areas
- **Singapore**: Circuit breaker i.e., lockdown till 1-Jun
- **Philippines**: Lockdown started in Manila and gradually imposed in other regions

Source: Press searches
Impact on incomes has already been felt even though number of cases and deaths is not very high in SE Asia and India

Impact on household income – pre covid-19 vs today
(03 - 10 April, 2020)
Percent of respondents

- Indonesia
  - No impact: 13%
  - Expecting future impact: 16%
  - Income loss by 10%: 11%
  - Income loss by 20%: 12%
  - Income loss by 30%: 17%
  - Income loss by >40%: 26%
  - Laid off: 4%

- Malaysia
  - No impact: 14%
  - Expecting future impact: 27%
  - Income loss by 10%: 10%
  - Income loss by 20%: 11%
  - Income loss by 30%: 15%
  - Income loss by >40%: 17%
  - Laid off: 6%

- Philippines
  - No impact: 14%
  - Expecting future impact: 16%
  - Income loss by 10%: 6%
  - Income loss by 20%: 8%
  - Income loss by 30%: 12%
  - Income loss by >40%: 20%
  - Laid off: 25%

- Singapore
  - No impact: 19%
  - Expecting future impact: 27%
  - Income loss by 10%: 12%
  - Income loss by 20%: 12%
  - Income loss by 30%: 10%
  - Income loss by >40%: 13%
  - Laid off: 8%

- Thailand
  - No impact: 6%
  - Expecting future impact: 21%
  - Income loss by 10%: 10%
  - Income loss by 20%: 14%
  - Income loss by 30%: 10%
  - Income loss by >40%: 32%
  - Laid off: 4%

- Vietnam
  - No impact: 6%
  - Expecting future impact: 18%
  - Income loss by 10%: 10%
  - Income loss by 20%: 16%
  - Income loss by 30%: 14%
  - Income loss by >40%: 22%
  - Laid off: 23%

Average reduction in monthly incomes*:
- Indonesia: 26%
- Malaysia: 17%
- Philippines: 20%
- Singapore: 13%
- Thailand: 32%
- Vietnam: 23%

Note: * Includes India in the totals
Source: L.E.K. / Lucid consumer survey in SEA, 03 -10 April, 2020 (N=2776); L.E.K. research and analysis
Governments are reacting to reinforce their economies

Size of governments’ fiscal stimulus pledges, as a proportion of GDP

<table>
<thead>
<tr>
<th>Country</th>
<th>Percent (of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>16.4</td>
</tr>
<tr>
<td>Singapore</td>
<td>10.7</td>
</tr>
<tr>
<td>Thailand</td>
<td>3.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.8</td>
</tr>
<tr>
<td>Vietnam</td>
<td>0.4</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Corporate measures

- **State loans / credit guarantees for companies**
  - Large scale loan guarantees for SMEs (as a part of fiscal stimulus or by restructuring loan procedures through financial institutions) to ensure that they retain access to liquidity (e.g. Malaysia)

- **Income subsidies for affected workers**
  - Subsidies in the form of wage contributions for workers which are affected heavily (e.g. Singapore)

- **Tax deferrals**
  - Corporate tax deferrals have been proposed in most countries (e.g. Philippines)

- **Re-training and re-skilling funds**
  - Subsidies to support affected and temporarily displaced workers through reskilling (e.g. Singapore)

Household measures

- **Social security deferrals or subsidies**
  - Social security payments have been deferred or subsidised in some countries (e.g. Malaysia)

- **Debt repayment holidays**
  - Subsidies for households debt payment and down payment has been proposed by some governments (e.g. Indonesia)

Source: Government press releases; Aseanbriefing; L.E.K. research and analysis
Government spend is likely to flow through infrastructure first. However other drivers of demand are likely to remain muted for a while.
The Southeast Asian cement sector faces many challenges during the COVID-19 pandemic.

**Plant operations**
- Plants closed as considered 'non-essential'
- Skeletal staff requirements

**Supply chain**
- Raw materials procurement challenges
- E.g., coal imports

**Distribution**
- Distributors & dealers locked down
- Logistics issues incl lack of drivers, road closures, permits etc

**Construction sector**
- Construction sites closed
- Labour challenges – locked down or foreign labour restrictions
- Declining foreign demand

**Economic activity**
- Challenged individual home builders' balance sheets
- Troubled real estate and property players
- Trouble financial institutions
- Muted trade, foreign investment and remittances

- Malaysia / Philippines
- All ASEAN countries
Currently economists are predicting a v-shaped recovery across most of SEA

Indexed real GDP – actual and forecasts (as of April 2020)
2015 = 100

Source: IMF World Economic Outlook, April 2020
The crisis could put the industry on a more sustainable footing in the longer run

SE Asia cement industry outlook

Current conditions

Some cement players ‘fail’

Demand growth returns improving prices and fortunes

Industry consolidation and structure rationalisation
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Agenda

- Impact and first response to COVID-19
- Prepare for the next wave and potential future pandemics
- On the other side of COVID-19
Impact from COVID-19

- Drop in cement demand
  - Overcapacity
  - Cement prices

- Invisibility and uncertainty
  - Recession magnitude
  - Market protectionism
  - Rules and regulations
  - Stimuli packages
  - Fuel and carbon prices
First response to COVID-19

- Health and safety of employees by social distancing
  - Limiting number of people at the plant
  - Working from home where possible
  - Closing plant access from the outside

- Protecting the business by ensuring cash flow
  - Safeguarding essential supplies to keep plant running
  - Evaluating and financing investments to support future needs
  - Complete plant closure (own or government decision)
  - Utilizing opportunities created by the crisis
Prepare for the next COVID-19 wave or new pandemics

- Ability to adjust production to market needs
- Optimize production costs
- Ensure access to needed supplies
- Access to technical support
- Competences of employees
- Operation and business overview
Cement catch up in digital adoption - many other industries to learn from

**Stage 1**
Digital impact mostly in **operations** and **cost reductions**, still limited **digital disruption**

**Stage 2**
Digital engagement with customers increasingly important, personalisation using advanced data analytics

**Stage 3**
Advanced technologies and **data analytics** consistently deployed to find competitive advantages

---

**Construction**

**Industrial Processing**

**Oil & Gas**

**Pharma**

**Transport & Logistics**

**Healthcare**

**Airlines**

**Education**

**Auto**

**Banking**

**Retail**

**Telco**

**Media**
Target your digital efforts at three levels

- **Product** level
- **Flow-sheet** level
- **Plant** level
Access your equipment from the distance

- Connects products and plants to a digital infrastructure
- Operate from the distance
- Mount sensors on existing equipment to create data for decision making
- Easy and cheap to retrofit
INSIGHT FROM THE DISTANCE

SiteConnect™ Mobile Insights App

REAL-TIME PRODUCTIVITY DATA

Monitor the performance and health of your critical assets anywhere, anytime.

SiteConnect keeps users connected with their equipment and plant. With on-the-go real-time monitoring and dashboards, operators are empowered with the information they need to manage and boost productivity.

THE CHALLENGE
Without accurate data and the digital systems needed to identify non-performing areas of operations, productivity will suffer.

THE SOLUTION
A mobile app that provides real-time insights on critical assets.

THE BENEFITS
- Improves productivity
- Optimises efficiency
- Enables additional uptime
Remote Assistance
See what I see (Virtual presence)

- Reduced need for external people entering site
- Access to experts across the globe
- Faster resolution of incidents and reduced cost of service delivery
On the other side of COVID-19

- Sustainable agenda
- Stimulus packages
- Digitalisation as enabler and catalyst
- Government supported financing options

Source: https://climatesafety.info/links-between-corona-and-climate/
Regulations and CO₂ allowance prices are ramping up

Many countries already adopting carbon tax or emission trading schemes

EU: Surge of CO₂ allowance price can create a large extra cash cost for cement production

- 1t of cement produces 600-700kg CO₂
- 17EUR additional cash cost today for each ton of cement

Source: World Bank carbon pricing dashboard; Markets Insider

ETS and/or carbon tax adopted or scheduled
Stimulus packages

- Large number of packages committed as immediate actions against recession
- Other focus than during the Financial crises
- Few environmental conditions, but many are calling for green recovery especially in EU
PROFITABLE SUSTAINABILITY

Make your business more profitable and more sustainable - at the same time

https://video.flsmidth.com/flsmidth-missionzero-1
Towards carbon-free cement in 2030

- **Step 1:** Phase out fossil fuels
- **Step 2:** Reduce clinker factor
- **Step 3:** Circular economy and alternative raw materials

**CO₂** emissions per ton of cement

- **Power supply**
  - 13%
- **Process emissions**
  - 55%
- **Heat generation**
  - 32%
Sustainability = Profitability

- Emissions
  - Calciner upgrades / replacements, incl. Low-NOₓ calciner, SCR solutions, SNCR, filter conversions, forthcoming technologies

- Alternative fuels
  - Hot disc, bypass & dust washing, AF handling / dosing / storage / drying, ash compensation, forthcoming technologies

- Energy efficiency
  - Grinding systems, coolers top cyclones, burners, fan upgrades, power efficiency upgrades in other key equipment

- Clinker substitution
  - Clay calcination, blending systems

- Process optimisation
  - Automation upgrades, robotised labs, remote monitoring

Sustainability and efficiency are increasingly reinforcing each other
Optimising operations through Digital

Increasing share of alternative fuels leads to higher process variability

Advanced process control systems stabilise and optimise process

Multi-objective control

$\rightarrow$ Enables up to 100% alternative fuels
$\rightarrow$ 2-5% reduction in emissions
$\rightarrow$ 2-6% production increase while maintaining product quality
Conclusion

Plant operation and COVID-19 response

DIGITALISATION

Use digitalization to limit COVID-19 effects and boost efficiency

SUSTAINABILITY

Sustainability is part of the long term solution to stay competitive in the market

STAY SAFE

Take good care of your employees and co-workers for everyone to stay safe

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Brannvoll Aps
April 22nd 2020

Give Away – Version 1,1

Frank O. Brannvoll – Brannvoll Aps – DK
Brannvoll ApS
Advisory, Trading & Management Services

Brannvoll ApS – Denmark

Services
Advisory & Consulting services
Management services
Energy markets analyzes and forecasts

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FULL POWER POINT
Give Away – from Video Conf.

Global markets
- FX – Impact on energy – Devaluations
- Brent oil – Forecast / Guestimates
- Coal API 2 / API 4 / Guestimates
- Petcoke: My best assessments / Guestimates
- Freight – USGC / Prices from Analyst
- Carbon Market Phase IV - Forecasts

Questions
FX MARKETS: IMPACT ON ENERGY PRICES

€/$ RANGE 1.05 / 1.15  
APRIL 22ND: 1.0860
€/$ WILL HISTORY REPEAT ITSELF?
STILL POTENTIAL WEAKER USD 2020

Published on Investing.com, 10/Feb/2020 - 0:11:41 GMT, Powered by TradingView.
EUR/USD, M

EURUSD Long Term Chart 1993-2020
Monthly charts

1999-2002 from 1.25 down to 0.85
followed by 2 years in range of $10 then break above $ 95
2005 back to 1.25 $30 move Green arrow
OBS similarity pattern 2015 - 2019 ?
Break up in 2020 ??

CR 321 : Jan 2020  €/$ 1.112
Back in $10 range 1.05 / 1.15 Blue channel
Reached predicted 1.25 (green channel)
Breaking (red)downtrend at 1.11
Target 1.15...for new uptrend

If replay of pattern from 2006, break above 1.15
will signal new Bull trend and confirmed by 1.20 breach
FX MARKETS: EM CURRENCIES WEAKER
APRIL 22ND ZAR 18.80 RUB 77.00 TRY 6.98 INR 76.65

ZAR -26%  TRY -10%  RUB -27%  INR -9%
World economy: Impact from Corona – virus and the measures taken globally
- Almost global lock down – China / part Asia now in reverse
- EU – USA, in recession only how big ?
- What is the effect after from stimulus packages – Inflation - unemployment US ? 20% ?

OPEC – Russia – US shaleproducers ….Agreement for production cuts
- Will US producers join in cuts, as all parts now are under pressure from Corona impact ?

Tradewar(s) – escalating or being solved : US/China ….US/EU ?
- Will this give a “solidarity solution “to solve crises / Or return blame game ?
- Seen more “my production my goods” – during crisis

Brexit – Agreement in 8 months ? With now virtual stand still in negotiations
- Will we see a NO Deal / New prolongation for UK temporary membership ?

Geopolitical tensions:
- Middle East situation: Saudi Arabia / Iran / Iraq / US / Russia ...now ...in background ,
- China / Taiwan – Tensions
MASSIVE OIL COLAPS / COAL STABLE
FIRST TIME EVER NEGATIVE WTI PRICE

Oil:
- Demand destruction
- Lock downs
- Refineries to shut down
- OPEC + Russia Deal
- Texas in new OPEC+ +(?)

Coal:
- Supply and demand lower
- Ports closings
- China still importing almost
- As normal
CRUDE OIL – FOCUS POINTS

- Demand Destruction Covid-19 measures:
  - IEA report April 14th: April Fall 20% up to 29 mio bpd lower than year ago possible
  - Q2 2020 expect 23 mio Bpd lower than 2019
  - Refineries loosing money on products (Jetfuel) – Stop production?

- New OPEC+/Russia agreements on production cuts – 2 year agreement 3 phases
  - 1: May - June 20 - 9.7 mbd / 2: July- Dec20 - 7.7 mbd 3: Jan21- Apr22 – 5.8 mbd
    - Other countries including US(?) and Canada, Brazil, Norway cut minimum 5 mbd exp 10 mbd
    - Still over supply – Production on storage – floating storage – Contango
    - Contango Buy Spot $28 – put on storage >> Sell Sep $36 (as long as storage capacity)
    - Will OPEC and others comply during summer …and if prices starts to rise?

- DOWNSIDE RISK STILL HUGE WTI traded MINUS 40USD tonight
  - Analysts forecast Brent could fall to $10 if long term Lock downs continue….and storage full
  - Need to find level where production stops $ 15 …10 ? …5?
  - Negative price –/ Minus $40 seen in WTI Cash delivery May!
BRENT OIL MONTHLY – SLIDING
22ND JUNE $ 17.50 / JULY 21,50
2005 – 2020

April 20 : USD 26.5
OPEC - Russia + Others in 2 Year agreement
Cut up to 21 mio bpd / May June ....
TECHNICAL ANALYSE
Depending on opening up of Lock downs
$20 / 35 if opening slow /storage still possible / IF not $10?
$25 / 45 - faster opening - demand back
Support $: 25 / 22 / 20 / 15 / 10
Resistance $: 30 / 35 / 40 / 50

$50 seen as Max retracement
Retracement zones - Technical $30 $ 35

Support from last OIL collaps 1989 & 1999 $20 / $10
Weekly BRENT April 20 : $ 27
Collaps from $45 to 22 Yellow Channel $20/40
New Range $ 25 / 45 expected
Long Term Trading support $ 10 - 25
Resistance :$ 30 / 35 / 40
Stochastic Oversold :
FOCUS POINTS – CORONA VIRUS / DEMAND SUPPLY BOTH FALLING

- Corona virus – Lock down effect less felt in coal – for now

- China coming back on demand side, import up – supporting Asian markets and Newcastle prices

- Chinese domestic coal price on the lower part of preferred range

- NDRC impose price control?

- Russian production continues – deliveries most towards asia

- Colombia – Stopped production (?) , Indonesia continues export

- Europe : Already low demand due to low gas and high EUA

- Now lower EUA prices (down 20 pct) but gas falling sharply ,

- ARA Stocks still high – no demand – low gas prices

- API4 stable due to fear of ports closing – and lack of export
  - Exemptions given for export – workers in ports

- India continued lock down – hit both supply and demand side

- Ports being closed – cement plants too , also impact Petcoke

ARA stocks lower

India coal stocks – Rising
API 2: ZOOM 2Q 2020

22nd April $43.00

Downtrend intact
Range on new lower levels
Sup: $45/40
Res: $50/52/55
Oversold

Forecasts 2020
$55/80
Avr:$65

Apr 2020 REVISED $40/65
CR322 API2 CAL (21) broke below strong support at $60.
Downtrend channel from $65 has led the way now targeting $55.
If below here test of lows from 2016 $51/50 in sight.
Upside limited to $60 (trendtop) after this $65.
Expected range: $50 / 60
Resistance: $60 / 66 / 71
Support: $55 / 50 / 45 / 40 / 38

Stochastic: No signal neutral zone.

In range channel still
Support $55 / 50
Resistance $60 / 65

Forecast 2020
$55 / 75
Avr: $68
API 4 FRONT QUARTER CONT Q2-20

APRIL 22ND $ 52.00

ICE AFR Q1 | 28/08/2017 00:00 - 13/04/2020 00:00 | 1 Week

API 4 front Quarter cont.
Weekly chart 2017-2020

Forecasts 2020
$50/75
Avr:$ 63

Sharp fall
Broken support at $ 60
Next support $55 major
Res: $60 / 65

Montel
API4 Front Cal cont.
Weekly chart 2017-2020

Resistance: $68 / 73
Support: $64 / 60 / 55
Stochastic: Oversold

Expected Range: $60 / 70

Forecasts 2020
$55 / 80
Avr: $65
Coal falling with Energy complex

Petcoke stable
On low level
For now ....?
2020 PETCOKE FOCUS POINTS: MASSIVE UNCERTAINTY AFTER CORONA – IMPACT

- Demand side falling quicker than supply:
- Demand on refined products down by 20-30%
- Refiners reducing production – support in short term
- US Shale oil not profitable / more from Saudi + OPEC = More petcoke supply and in 4.5%

- Impact on Cement demand 30 - 50% - Less demand Petcoke – Force Majeure declared in India
- India Lock down will dramatically cut demand in short term – Ports Cemfactories Closed
- Vessels on sea being redirected – PC sold to lower prices

- EU under lock down – demand collapsed most countries / Turkey also to close down
- More production of 4.5% pet coke, But demand for 6.5% falling – spread stable between $3/6
- Freight rates fallen in 2020 with high volatility may add support to FOB prices – IF demand?

- Prices 45/60 days: difficult to predict 20th April estimates 6.5%: $32 and 4.5% : $37
- Freight rate USGC - ARA $9.5 USD Supramax
USGC HIGH SULPHUR 6.5%: FOB

High Sulphur Petcoke Prices (6.5%, 40 HGI) FOB
Historical View 2004 - 2020

6.5% $32 Discount API 4: 53%
High volatility expected risk to downside!!

Expected Range $28 / 40
Resistance: $ 35/ 40 / 45 / 50 / 60
Support: $ 32 / 28 / 25 / 20 / (low 2005) 10

CP19: 2020 forecasts
Range $28 / 53 Average $40

USGC 6.5% FOB
FOB PETCOKE DISCOUNT TO COAL: 2010-2020
EXPECTED 40-55% 2020

Petcoke discount to Coal in %
API4 - USGC 6.5% FOB based on Kcal 6000
From January 2010 = avr 40%

CR Update
Apr - 2020
53 %
FREIGHT RATES: IN FREE FALL

- USGC-ARA $9.5
- USGC-Turkey $13.5
- Estimate 20th April
- USGC - ECI $25.5
- USGC- China $23.5
ARA PETCOKE DISCOUNT TO COAL: 2010-2020
EXPECTED 2020: 20-35%  NEUTRAL ZONE

Petcoke discount to Coal in %
API2 - USGC 6.5% cfr ARA based on Kcal 6000
From jan 2010 = 25%
long term average from jan 2004 = 30%

Very cheap Zone
Cheap Petcoke Zone
Neutral Zone 20 - 40%
Expensive Petcoke Zone
Very expensive Zone

CR Update
April - 2020
27 %
2019 Verified Emissions released 15 April 1.537 mio T (down 8.9% from 2018)

Question of priorities in the “AFTER COVID19 world”
- Cost of Covid19 – support packages / Labour situation / Green deal in EU
- Saved emissions estimated at 400 mio Tons in EU during lock down

End of phase III – New stricter rules in Phase IV –
- Market stability reserve MSR in function reduces allowances
- 2 year reviews – loose surplus allowances

New higher Carbon reduction targets from New Commission for 2030 from 40% to 50-55%
- Opens up for new revision of EU-ETS in phase IV / Revision in 2025

Allocations and final rules for Phase IV not yet finalised
- Cement sector awaiting clarification Benchmark, Allocation rules and final set up
- Protection against carbon leakage / Levy on import from countries outside the EU-ETS
  - EUA are Cash – If not needed for compliance!
CARBON MARKET EUA DEC 2020:
APRIL 22 : € 20.50

EUA Front Year cont
Weekly Chart 2017 - 2020

Major resistance €22
Strong support €15
Long term target on hold till Corona -Impact on Industry sectors decided in EU

BUY signal from very oversold!
Please get in contact: tailormade : analyses & risk / trading support

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