Virtual Capital Market Day
thyssenkrupp UCE

January 13th, 2022

engineering.tomorrow.together.
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tkUCE - An attractive scale business

Examining strategic options for the optimal development of tkUCE going forward – IPO preferred option for value crystallization and capital market access

A technology leader in water electrolysis – set to benefit from the strong demand for green hydrogen production technology

Existing global organization that continues to grow with strong partners

Promising pipeline of several large-scale projects

Strong management team that has developed tkUCE into an industry leading player

Key to tk’s investment case – tk will continue to hold a majority shareholding and support tkUCE’s growth journey
Video | thyssenkrupp nucera introduction
thyssenkrupp nucera

A technology leader in hydrogen (H₂)

Capital Market Day
January 13, 2022
We need to save the global climate
Purpose: We shape the new era.

Vision: #1 provider for hydrogen and chlorine technologies.

Mission: With passion for innovation, we enable our customers to make superior electrolysis products and minimize the CO$_2$ footprint.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Experience</th>
</tr>
</thead>
</table>
| Denis Krude        | CEO                                                | • CEO of thyssenkrupp nucera since 2016  
• 25+ years of industry and 19 years of electrolysis experience  
• With thyssenkrupp since 1998 |
| Dr. Arno Pfannschmidt | CFO                                               | • CFO of thyssenkrupp nucera since 2014  
• 25+ years of industry and 7 years of electrolysis experience  
• With thyssenkrupp since 1993 |
| Fulvio Federico    | CTO                                                | • 25+ years of industry and electrolysis experience  
• thyssenkrupp nucera CTO since 2017, joined in 2015  
• Held leading positions in the electrochemical industry  
• Project experience from basic concepts to industrialization |
| Dr. Christoph Noeres | Head of Green Hydrogen                           | • Head of Energy Storage and Hydrogen since January 2020  
• 19+ years’ experience in chemical engineering, five years in R&D and 14 in projects for the chlorine & electrolysis industry  
• With thyssenkrupp since 2001 |
| Dr. Roland Beckmann | Head of Chlor-Alkali                              | • Headed the thyssenkrupp Electrolysis Project Execution Department since 2014  
• 25+ years of industry and 20 years of electrolysis experience  
• With thyssenkrupp since 1997 |
| Dr. Ulf Steffen Bäumer | Head of Innovation Center / Service & Digitalisation | • 15+ years of industry experience  
• Responsible for the development of electrolysis cell technologies, service business and digitalization  
• With thyssenkrupp since 2004 |
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<th>Speaker</th>
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<td>Denis Krude</td>
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<td>2</td>
<td>Business Model &amp; Corporate Strategy</td>
<td>Denis Krude</td>
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<tr>
<td>3</td>
<td>The Hydrogen Reality</td>
<td>Christoph Noeres</td>
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<td>4</td>
<td>Alkaline Water Electrolysis Technology</td>
<td>Christoph Noeres</td>
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<tr>
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<td>Q&amp;A and Break</td>
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<td>5</td>
<td>The Chlor-Alkali Market</td>
<td>Roland Beckmann</td>
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<td>Chlor-Alkali Technology – the DNA for AWE</td>
<td>Roland Beckmann</td>
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<td>Innovation Leadership</td>
<td>Fulvio Federico</td>
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<tr>
<td>8</td>
<td>Technology Service and Digitalization</td>
<td>Ulf Bäumer</td>
</tr>
<tr>
<td></td>
<td>Q&amp;A and Break</td>
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<td>Manufacturing Strategy</td>
<td>Fulvio Federico</td>
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<td>Environment, Social, Governance</td>
<td>Denis Krude</td>
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<td>11</td>
<td>Financial Section</td>
<td>Arno Pfannschmidt</td>
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<tr>
<td></td>
<td>Wrap-up and Q&amp;A</td>
<td>Denis Krude</td>
</tr>
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1. Introduction to thyssenkrupp nucera

Denis Krude
Creating the global leader of Alkaline Water Electrolysis

- Enabler for industries to decarbonize
- High growth water electrolysis market
- A technology leader in the industrial scale electrolysis
- Global organization with reputable partners
- Highly experienced management team
- High value-add aftermarket and life cycle service offering
- Fast growing AWE order backlog proves validity
Electrolysis connects the renewable energy sector with a wide range of industries and enables industry decarbonization.

**Renewable energy**
Renewable electricity is expected to be the primary energy source for all market segments.

**Green hydrogen**
- Electrolysis converts renewable energy into green hydrogen
- Enables use of renewables in wide range of industries
- Replaces fossil-fuel based processes

**Hydrogen markets**
Hydrogen decarbonizes industry processes: mobility, substitute natural gas, refineries, fertilizers, steel, chemicals, etc.

**Green hydrogen economy drivers**
- Climate & environmental protection
- Growing renewable energy sector at low cost
- Appropriate legal frameworks
Large existing and high growth hydrogen market will further accelerate

Estimated global hydrogen demand by segment by 2050 (TWh\(^1\) p.a.)\(^2\)

<table>
<thead>
<tr>
<th>Segment</th>
<th>2020A</th>
<th>2050E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power generation &amp; storage</td>
<td>3,546</td>
<td>26,004</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buildings &amp; industry heat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial feedstock</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Equivalen to 110 bn € in 2020E\(^3\)

Large opportunities for electrolysis within existing hydrogen market

1. Energy content of 1kg of hydrogen equal to 141.9 MJ (HHV) = 39.4 KWh
We are the Alkaline Water Electrolysis (AWE) and Chlor-Alkali (CA) technology provider globally.

1. De Nora shareholding structure
- De Nora Family 63.1%, Snam 35.6%, Cordusio Fiduciary (Board Members and Management) 1.2%

AWE
- Order intake FY 20/21A: 89 mn €

CA
- Order intake FY 20/21A: 288 mn €

Select AWE Customers
- thyssenkrupp
- nucera

Select CA Customers
- thyssenkrupp
- nucera

1. De Nora shareholding structure – De Nora Family 63.1%, Snam 35.6%, Cordusio Fiduciary (Board Members and Management) 1.2%
Building on a leading global organization with a network close to customers…

- Experienced management with strong track record leading an organization that is worldwide close to its customers

- Current global headcount of > 400 (ongoing expansion)

- 6 local organizations operating in regional markets
  - Dortmund
  - Tokyo & Okayama
  - Shanghai
  - Houston
  - Milan
  - Riyadh & Perth

1. Newly established office

- thyssenkrupp nucera locations
- Industrie De Nora partner
- tk plant technology partner

Management structure:

- CEO: Denis Krude
- CFO: Dr. Arno Pfannschmidt
- CTO: Fulvio Federico
- Head of Green Hydrogen: Dr. Christoph Noeres
- Head of Chlor-Alkali: Dr. Roland Beckmann
- Head of Service & Innovation Center: Dr. Ulf Steffen Bäumer

1. Currently not operational.
thyssenkrupp nucera has started to scale-up the organization

Footprint

• Expansion of existing offices in capacity and capabilities
• Establishment of new offices in Australia and Saudi Arabia

Know-how and processes

Established know-how and processes in CA as basis for rapid AWE scale-up
• Roll-out of know-how and processes to existing and new offices ongoing
• Global workshare constantly adapted to growing setup

Team

• 86 positions filled globally in FY20/21
• Overwhelming response to job postings with 2,000+ applicants
• Attraction of young and smart talents worldwide

thyssenkrupp nucera is well prepared for the future of rapid growth
thyssenkrupp nucera’s proven experience in Chlor-Alkali business provides a strong technology basis for AWE scale-up

Chlor-Alkali Electrolysis

- A global leader with proven experience with over 600 projects & 240,000 cell elements >10 GW of electrolyzer capacity installed

Market Readiness

- Industrial-scale installations
- Quality proven supply chain of 1 GW cell manufacturing capacity p.a.

Product

- A technology leader for electrolysis
- Handling of hydrogen as a by-product

Organization & Network

- Holistic life cycle services
- Global network with partners

Alkaline Water Electrolysis

Building on Chlor-Alkali experience to be #1 in AWE

- Industrial-scale hydrogen plants
- Expand to a 5 GW supply chain

- Standardized AWE product with leading TCO
- Hydrogen as the main product

- Successful service model
- Automation and digitalization

Key enabler of hydrogen production

1. Total cost of ownership
thyssenkrupp nucera’s unique 20 MW AWE module – based on proven Chlor-Alkali properties

- **Quality** | Proven cell design
- **Longevity** | High durability proven by Chlor-Alkali
- **High Performance** | Long-term technology experience
- **Compact Design** | High current density
- **Service** | Global service network with partners
thyssenkrupp nucera offers an efficient and highly scalable module concept to match highest market demands
Select thyssenkrupp nucera green hydrogen milestones timeline solidifies position as an industry leader
thyssenkrupp nucera has the largest\(^1\) contract backlog

```
<table>
<thead>
<tr>
<th>Project</th>
<th>Capacity</th>
<th>Start-up Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>“NEOM”</td>
<td>&gt;2 GW</td>
<td>2026</td>
</tr>
<tr>
<td>“Shell”</td>
<td>200 MW</td>
<td>2024</td>
</tr>
</tbody>
</table>
```

1. As of 31.12.2021

tyssenkrupp nucera has an AWE order backlog of approx. 0.9 bn €\(^1\) and a CA and Service order backlog of approx. 0.4 bn €\(^1\)
Key messages | thyssenkrupp nucera, a global leader in Alkaline Water Electrolysis

- High growth hydrogen market will drive growth in water electrolysis
- A leading organization with a global network close to customers
- Proven know-how in Chlor-Alkali provides a strong basis for the scale-up of AWE
- Modular 20 MW electrolyzer specifically designed for industrial-scale projects
- Secured hydrogen projects with a total of more than 2 GW and working on further multi 100 MW opportunities
Illustrative scope for a hydrogen plant project

<table>
<thead>
<tr>
<th>Description</th>
<th>AWE modules</th>
<th>Balance of plant</th>
<th>Civil construction</th>
<th>Erection on site</th>
<th>Commissioning</th>
<th>Technology service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply of AWE modules: procurement of materials and equipment, fabrication of cells and modules</td>
<td>Engineering and procurement of balance of plant (BoP), e.g. transformers, rectifiers, purification, compression, utilities, etc.</td>
<td>Civil structures and foundations at site</td>
<td>Installation of AWE modules, BoP equipment, instrumentation and piping up to the battery limits at site</td>
<td>Functional and control system tests, cold commissioning up to Start-up of AWE modules and the hydrogen plant, including performance testing</td>
<td>After sales and services including revamps and refurbishment, full service, plant optimization, and de-bottlenecking</td>
<td></td>
</tr>
</tbody>
</table>
Preferred business models focused on attractiveness in terms of added value and limited complexity

<table>
<thead>
<tr>
<th>Business model</th>
<th>AWE modules</th>
<th>Balance of plant</th>
<th>Civil construction</th>
<th>Erection on site</th>
<th>Commissioning</th>
<th>Technology service</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Selectively provided⁴</td>
<td>Advisory²</td>
<td>Advisory¹</td>
<td>Advisory¹</td>
<td>Advisory¹</td>
<td>Advisory¹</td>
</tr>
<tr>
<td>2</td>
<td>Selectively provided⁴</td>
<td>Advisory²</td>
<td>Advisory¹</td>
<td>Advisory¹</td>
<td>Advisory¹</td>
<td>Advisory¹</td>
</tr>
</tbody>
</table>

- **High value-add**
  - Business model scope
  - Scope provided by thyssenkrupp nucera, executed by Partners (e.g. Uhde, De Nora)

- **Limited complexity**
  - Positive
  - Right to left increasing attractiveness

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1. thyssenkrupp nucera has the ability to perform civil construction through its partners at the request of the client
2. Only for proprietary equipment
De Nora provides access to best-in-class electrodes technology and a global service network, Uhde is an EPC\(^1\) provider, while thyssenkrupp nucera holds the technology IP

**De Nora capability highlights**

- One of the largest suppliers of metal coated electrodes and a recognized pioneer in water electrolysis
- An innovative provider of electrodes and key components
- Large manufacturing capacity and global network of service workshops

**De Nora key areas of collaboration with thyssenkrupp nucera**

20-year partnership, dedicated to unique technical solutions

- Technology
  - Joint R&D programs
  - Dedicated development of coatings
- Manufacturing of Electrolysis Cells
  - Manufacturer of the electrolysis cells
  - 240,000 elements made (>10 GW)

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**tk Uhde capability highlights**

- A leading engineering business, with expertise in EPC for industrial plants
- Modularization expertise at Uhde Thailand
- Portfolio includes leading technologies and downstream processes that provide a competitive advantage to thyssenkrupp nucera in joint offerings

**tk Uhde key areas of collaboration with thyssenkrupp nucera**

- EPC services
- Regional support
- Joint offering of process chains: CA – EDC / VC / PVC, \(\text{H}_2\) – ammonia / methanol

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1. Engineering, Procurement, and Construction
Strategic roadmap for disruptive next generation architecture will deliver superior performance

AWE 1.0 technology
- Standardized cell production with 1 GW p.a. manufacturing capacity
- Highly competitive total cost of ownership
- Proven quality and reliability at scale

AWE 1.x technology
- Continuous design improvements – reducing CAPEX and OPEX
- Serial production for cell and module fabrication at multi GW scale
- Automation of fabrication and assembly
- Digital solutions to optimize operations

AWE 2.0 technology
- Disruptive next generation architecture for a quantum leap in total cost of ownership
- Major improvements in stack design, cell structure, electrodes and diaphragm
- Roll-out of GW factories to multiple regions

Total Cost of Ownership
- Product improvements

Today
2-3 Years
4-5 Years
Electrolysis is in thyssenkrupp nucera’s DNA with decades of experience

**Foundation**
- Decades of electrolysis experience
- An established technology leader
- Commitment to quality and longevity
- Holistic life-cycle services
- Multi-cultural set-up

**Vision for new era**
- Diversified technology and services portfolio with globally leading TCO
- Electrolyzer GW factories around the globe
- Fully automated and digitized fabrication and operation
- Attraction & inspiration of talents
- Enable industry to deeply decarbonize

**Global number one provider for hydrogen and chlorine technologies**
Key messages | thyssenkrupp nucera structured to benefit from a global platform

- Highly scalable business model focused on most value-add activities
- Strong strategic partnerships with Uhde and De Nora, IP rights with thyssenkrupp nucera
- Clear technology roadmap and company vision for long-term success
3. The Hydrogen Reality

Christoph Noeres
Hydrogen already has a market demand of more than 3,500 TWh

Hydrogen market demand 2020A

- Methanol: 14%
- Ammonia: 37%
- Other: 6%
- Refining: 43%

Nearly all demand deployed in industrial uses

- Current H2 market generates 900 Mt of CO2 emissions per year...
- Total industry generates 24% of global emissions...
- Assumption: 3,546 TWh at 100% green H2 at 75% energy efficiency and 5,000 full load hours of operation p.a.

2. Includes DRI and other industrial uses
4. Refers to 2019 Other Energy Industries and Industry uses
The worldwide hydrogen market is expected to grow sevenfold by 2050

Hydrogen market development until 2050 (TWh)\(^2\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Power generation</th>
<th>Transportation</th>
<th>Building heat and power</th>
<th>Industrial feedstock</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>3,546</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2050</td>
<td>26,004</td>
<td>11,229</td>
<td>4,334</td>
<td>7,880</td>
</tr>
</tbody>
</table>

2050: green hydrogen will account for \(60 \text{ – } 80\%\)

80 Gt of CO\(_2\) cumulatively abated by 2050\(^2\)

2050 about \(~5,500\) GW electrolysis

...assuming 26,004 TWh at 80% market share of green H\(_2\) at 75% energy efficiency and 5,000 full load hours of operation p.a.

1. Converted from Mt with an energy content of 1kg of hydrogen equal to 141.9 MJ (HHV) = 39.4 KWh
thyssenkrupp nucera focused on green hydrogen, an enabler of the net zero economy

<table>
<thead>
<tr>
<th>Technology</th>
<th>How technology addresses Net Zero goals</th>
<th>2050 supply mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey hydrogen</td>
<td>□ Emits around 10kg of CO₂ per kg of hydrogen produced</td>
<td>0%</td>
</tr>
<tr>
<td>Coal</td>
<td>Reforming (Gasification)</td>
<td></td>
</tr>
<tr>
<td>Natural Gas Biomethane</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas Reforming (Gasification)</td>
<td><strong>CO₂ emitted</strong></td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Blue hydrogen         | ✓ Natural gas reformed to H₂ and CO / CO₂ in Autothermal Methane-Reformer (AMR) | 20 – 40%        |
| Natural Gas Biomethane| Reforming (Gasification)               |                 |
| Biomass               |                                                  |                 |
| Natural Gas Reforming (Gasification) | **CO₂ stored / reused** |                 |
| Biomass               |                                                  |                 |

| Green hydrogen        | ✓ Essentially zero emissions                   | 60 – 80%        |
| Renewable energy      | Electrolysis                                   |                 |
| Water                 |                                                  |                 |
| Renewable energy      |                                                  |                 |
| Electrolysis          | **No CO₂ emitted**                            |                 |
| Renewable energy      |                                                  |                 |
| Renewable energy      |                                                  |                 |
| Electrolysis          |                                                  |                 |
| Renewable energy      |                                                  |                 |

1. Carbon capture and storage (CCS)  
Tremendous momentum for hydrogen projects globally

Announced hydrogen production volume by 2030\(^4\)

(TWh\(^1\) p.a.)

- 2019P: 90
- 2020P: 244
- 2021P: 717

\(8x\)

Green future

### 2021

50% of announced hydrogen projects are green, corresponding to 93 GW\(^2,4\) electrolysis

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1. Converted from Mt with an energy content of 1 kg hydrogen equal to 141.9 MJ (HHV) = 39.4 kWh
2. Assuming a conversion efficiency of 75% and about 5,000 full load hours p.a.
3. Green market share not given for 2019 and 2020

Global hydrogen projects and investment across the value chain – announced as of November 2021

- Focus on large-scale projects including commissioning after 2030, >1000 small scale projects and project proposals not announced
- Includes 9 hydrogen production projects in China without announced end-use

thyssenkrupp nucera focus

- **43** Giga-scale production
  - Green hydrogen projects >1 GW, low-carbon hydrogen projects >200 ktpa
- **221** Large-scale industrial usage
  - Refinery, ammonia, methanol, steel and industry feedstock
- **133** Transport
  - Trains, ships, trucks, cars and other hydrogen mobility applications
- **74** Integrated hydrogen economy
  - Cross-industry and projects with different types of end uses
- **51** Infrastructure projects
  - Hydrogen distribution, transportation, conversion and storage

Announced MW-scale projects

- **Europe** 50%
- **North America** 13%
- **China & Asia** 23%
- **Australia** 8%
- **Others** 6%

1. Focus on large-scale projects including commissioning after 2030, >1000 small scale projects and project proposals not included
2. Includes 9 hydrogen production projects in China without announced end-use
3. Greater Oceania, including New Zealand

thyssenkrupp nucera selected sales funnel already can cover an order intake volume of 13+bn EUR – median project size of 100 MW

- **Total number of global announced projects**: 522
- **Giga-scale production, large-scale industrial usage, transportation**: 397
- **Currently identified as attractive projects for thyssenkrupp nucera**: 90

- **13+ bn €**
- **35 countries**
- **100 MW**

1. Focus on large-scale projects including commissioning after 2030, >1000 small scale projects and project proposals not included
The hydrogen economy has broad-based secular support for growth

- Green hydrogen driven by net zero targets and green recovery policies
- Increasing CO$_2$ emission costs promotes innovative green energy solutions
- Continuous decline of renewable energy costs
- Growing installed base of renewable energy (wind and solar)
- Seen as the only viable solution to decarbonise hard to abate industries
- Large business potential in all market sectors

93 countries have adopted net-zero targets$^1$
39 countries have adopted hydrogen strategies$^1$

C.11% global annual decline rate of renewable power$^2$ prices between 2010 and 2020$^3$

>40 giga-scale production projects announced as of Nov 2021$^1$
The world is moving towards green hydrogen

- Countries representing over 80% of global GDP\(^1\) plan to enter the hydrogen economy by 2025 with a dedicated strategy
- Energy independence and green energy recovery initiatives as key points in countries’ energy agenda
- Green hydrogen central to all hydrogen strategies
- Demand of industry applications is the main driver (refineries, ammonia, and steel making)

39 countries with dedicated hydrogen strategy\(^2\)

93 countries have adopted net zero targets\(^2\)

1. Including the United States and European Union
Hydrogen has significant cost reduction potential which is further accelerated by increasing cost for carbon emissions.

European trading system for emission allowances (€/t CO$_2$)$^1$

- Emission allowances to nearly double from today to 2030
- Auctioning emission allowances is a main driver for green hydrogen
- “Analysts raise EU carbon price forecasts as tougher climate targets loom” (Reuters, April 2021)
- “Carbon to hit 100 Euros sooner than you think” (Bloomberg NEF, June 2021)

1. Source: Bloomberg NEF, New Energy Outlook, 2021
Low cost renewable energy is the basis for competitive green hydrogen production

Global weighted-average utility-scale LCOE by technology in USD/ MWh

- Solar and wind power costs continue to decline at a rate of c.11% per year
- Hydrogen costs expected to decline accordingly, as electrical power constitutes majority of total cost
- Record prices as low as 10.4 USD/MWh for solar PV

LCOE = Levelized Cost of Energy  
2. ACWA Power, Price achieved in Saudi Arabia’s Shuaibah Project
Large scale renewable energy projects continue to push down the cost of renewable energy.

10.4 USD / MWh PPA in Saudi Arabia (Shuaibah project)\(^1\)

In 2020 an additional capacity of up to 280 GW renewable power came online\(^2\)

In 2025 an additional capacity of up to 400 GW renewable power is expected to come online\(^2\)

1. Source: ACWA Power, price achieved in this project
Refining, ammonia, and steel are the focus applications the market is starting with

- **Refining**: Substitution of grey H$_2$ feed, profitable at $>100$ USD/tCO$_2$
- **Ammonia**: Substitution of grey H$_2$ and green energy vector, profitable at $>100$ USD/tCO$_2$
- **Steel**: Substitution of coke for reduction of iron ore, profitable at ~50 USD/tCO$_2$

No alternative to green hydrogen in hard to abate sectors with exposure to carbon tax

Efficient production of hydrogen requires industrial scale hydrogen plants

Substitution
- Substitution of grey hydrogen in existing industrial value chains requires industrial scale solutions

Economies of scale
- Large scale electrolysis needs materially lower investment in project development, engineering, and construction

Downstream fit
- New downstream PtX\(^4\) process as well as transport vessels for global supply chains are only competitive at large scale

Assuming 3,546 TWh at 100% green H\(_2\) at 75% energy efficiency (HHV\(^3\)) and 5,000 full load hours of operation p.a.

~950 GW

Illustrative cost down curve

1. Includes DRI and other industrial uses
3. High Heating Value
4. Power to X
Key messages | Green hydrogen is a huge opportunity in a fast developing market

- Steep market development expected with gigawatt scale projects announced
- Green hydrogen is the key to the energy transition driven by governmental policies and low cost renewable energy
- Green hydrogen demand will be driven by the industrial sector – thyssenkrupp nucera’s focus market
4. AWE Technology

Christoph Noeres
thyssenkrupp nucera’s AWE technology is derived from decades of know-how in the electrochemical industry

The foundation of thyssenkrupp nucera

Engineering know-how
- A global leader in chlorine-electrolysis
- 30+ years of experience in plant engineering and design of industrial scale electrolysis for production of chlor-alkali and hydrogen
- >10 GW electrolyzer capacity installed
- >600 electrochemical projects realized
- ~50% of sales through aftermarket services

Advancement of AWE

AWE standardized & modular
- Competitive standardized high performance product
- 1 GW p.a. electrolyzer supply chain for water electrolysis available today
- Scalable technology with 20 MW module
- Basis for efficient supply chain and mass production

Green hydrogen future

Scaling-up & cost down
- Cost down roadmap:
  - Manufacturing scale-up
  - High performance materials
- Incremental design improvements
- Prepare disruptive product design AWE 2.0
thyssenkrupp nucera’s Alkaline Water Electrolyzers – designed for industrial-scale roll-out

- Worldwide one of the biggest electrolyzer modules
- Standardized solution for green hydrogen
- High current density operation with optimized footprint

✔ Quality | Proven cell design
✔ Longevity | High durability proven by Chlor-Alkali
✔ High Performance | Long-term technology experience

✔ Service | Global service network with partners
✔ Compact Design | High current density
Our business case: 
Climate neutral with green hydrogen. Industrial scale.

Video | AWE technology at industrial scale
thyssenkrupp nucera offers an efficient and highly scalable module concept to match highest market demands.
Demonstrator and test stand of AWE technology at Carbon2Chem in Duisburg

Continuous testing of innovative components and materials

- Capacity: up to 2 MW
- H₂ production: 440 Nm³/h
- H₂ purity: > 99.95 % (dry)
Assembly of an electrolyzer stack (Chlor-Alkali)
Large scale modular electrolysis plants (Chlor-Alkali)

60 MW Electrolysis Plant

- Customer: Tessenderlo Group
- Location: Belgium
- Capacity
  - 307,000 t/a of NaOH
  - 272,000 t/a Cl₂
  - 7,700 t/a of H₂\(^1\)

1. Hydrogen is about 35 times lighter than chlorine
thyssenkrupp nucera’s AWE technology is most suitable for large scale rollout of green hydrogen production capacity globally

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<tr>
<th>Technology</th>
<th>Alkaline Water Electrolysis (AWE)</th>
<th>Polymer Electrolyte Membrane (PEM) Electrolysis</th>
<th>Solid Oxide Electrolyzer Cell (SOEC)</th>
</tr>
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<tbody>
<tr>
<td>Development stage¹</td>
<td>Mature and commercial</td>
<td>Commercial under development</td>
<td>Early stage development</td>
</tr>
<tr>
<td>Application¹</td>
<td>Centralized</td>
<td>Decentralized</td>
<td>To be determined</td>
</tr>
<tr>
<td>Typical plant size (MW)²</td>
<td>Multiple of 100</td>
<td>Multiple of 10</td>
<td>To be determined</td>
</tr>
<tr>
<td>Response time³</td>
<td>Fast</td>
<td>Very fast</td>
<td>Very slow</td>
</tr>
<tr>
<td>Efficiency⁴,⁵ (LHV)⁶</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2030E</td>
<td>thyssenkrupp nucera¹: Atmosphere</td>
<td>Industry average: n/a</td>
<td>Industry average: n/a</td>
</tr>
<tr>
<td>Pressure (bar)⁴</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of precious metals¹</td>
<td>Limited</td>
<td>Significant</td>
<td>n/a</td>
</tr>
</tbody>
</table>

thyssenkrupp nucera’s AWE is leading the technology development and represents the most competitive green H₂ production solution.

Cost reduction measures of thyssenkrupp nucera

AWE and PEM cost evolution

(2020-2050, USD per kW)

1. Includes Global NZE by 2050 for Alkaline and PEM
Key messages | AWE will be a leading green hydrogen production technology

- AWE technology is ready today
- Most suitable technology for industrial scale hydrogen production
- High performance and cost leading technology
# Capital Market Day agenda

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<td>Business Model &amp; Corporate Strategy</td>
<td>Denis Krude</td>
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<td>The Hydrogen Reality</td>
<td>Christoph Noeres</td>
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<td>Alkaline Water Electrolysis Technology</td>
<td>Christoph Noeres</td>
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<td>Q&amp;A and Break</td>
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<td>The Chlor-Alkali Market</td>
<td>Roland Beckmann</td>
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<td>Chlor-Alkali Technology – the DNA for AWE</td>
<td>Roland Beckmann</td>
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<td>Innovation Leadership</td>
<td>Fulvio Federico</td>
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<td>Technology Service and Digitalization</td>
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<tr>
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<td>Manufacturing Strategy</td>
<td>Fulvio Federico</td>
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<td>Environment, Social, Governance</td>
<td>Denis Krude</td>
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<td>Financial Section</td>
<td>Arno Pfannschmidt</td>
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<tr>
<td>Wrap-up and Q&amp;A</td>
<td>Denis Krude</td>
</tr>
</tbody>
</table>
5. Chlor-Alkali Market

Roland Beckmann
CA chemical products are essential for a large number of end products:

- Aluminium
- Polyurethane foam / Polycarbonates / PVC
- Hydrogenation of Alkenes, Fats and Oils
- Soap / Detergents
- Sodium Hypochlorite / Disinfection
- Hydrochloric acid
- Hydrogen compression and bottling

Illustrative examples, not exhaustive

Global demand for Chlorine and Caustic Soda grows in line with GDP enabling strong and stable growth for thyssenkrupp nucera.
CA chemical process in a nutshell

**CA chemistry describes the process of splitting salt (NaCl) and water (H\(_2\)O) into Chlorine (Cl\(_2\)), Caustic Soda (NaOH) and Hydrogen (H\(_2\)).**

**Water (H\(_2\)O)**
- Anode

**Brine**

**Electricity**
- Cathode

**Hydrogen (H\(_2\))**
- Cathode
- Membrane

**Salt (NaCl)**
- Anode

**Chlorine (Cl\(_2\))**
- Anode
thyssenkrupp nucera is the global market leader in CA membrane electrolysis

CA market installed capacity in operation (2021)

- thyssenkrupp nucera
- Global Top 3 competitors and others
- Main suppliers of CA membrane technologies

Accumulated orders up to 2021

- 40.5 million t/year Cl₂ from CA
- 2 million t/year Cl₂ from HCl-ODC
- 6.6 GW eq. H₂ produced from CA

1. Company estimate 2. Company information as of December 2021, time period from 1977 to 2021 3. HCl-ODC = Hydro-chloric acid – Oxygen-Depolarised Cathode 4. 6.6 GW installed power to get the same amount of H₂ produced from CA also from AWE-electrolysers
Large installed CA base provides meaningful and stable services – revenue potential with similar ramp-up expected for AWE

Estimated service demand based on global CA installed base (membrane technology)

12,000 € x 200,000+ : 8 years = ~300 mn € p.a.

- Average investment per element for remembraning/recoating/revamp
- Approximate number of elements in operation
- Average timeline service spending

Large installed CA base globally…

… provides significant additional service opportunities…

… with similar service demand ramp-up expected for AWE

Estimated service demand for electrolyzers in CA for thyssenkrupp nucera amounts to ~300 mn € per year – similar ramp-up expected for AWE
Key messages | thyssenkrupp nucera is a global leader in the large and stable CA market

- CA electrolysis is a fundamental technology for the chemical industry and the starting point for various value chains of day-to-day products
- thyssenkrupp nucera is a global market leader in CA membrane electrolysis in terms of installed capacity in operation
- Large installed CA base provides meaningful and stable services revenue potential with similar ramp-up expected for AWE
6. Chlor-Alkali Technology – the DNA for AWE

Roland Beckmann
thyssenkrupp nucera’s leading expertise in CA electrolysis technology serves as strong basis for AWE

Global leader in electrolysis

>10 GW electrolyzer capacity installed\(^1\)

Over 600 electrochemical projects realized

Over 240,000 electrolytic cell elements produced

Product portfolio

**CA Electrolysis:**
Local production of Chlorine (Cl\(_2\)), Caustic Soda (NaOH) and Hydrogen (H\(_2\))

- Uhde BM2.7\(^2\)
- Chlorine Engineers BiTAC\(^3\)
- NaCl ODC\(^4\)

**Hydrochloric Acid (HCl) Electrolysis:**
Recycling of HCl into Chlorine (Cl\(_2\)) and Hydrogen (H\(_2\))

- HCl Diaphragm electrolysis
- HCl ODC\(^4\) electrolysis\(^5\)

---

1. To produce chlorine and hydrogen
2. Bipolar membrane electrolyzer 2.7 m\(^2\)
3. BITAC: Bipolar Tosoh and Chlorine Engineers
4. ODC: Oxygen Depolarized Cathode
5. Recycling HCl at low energy consumption

64
thyssenkrupp nucera’s leading design and manufacturing know-how crucial in developing the AWE cell

Know-how and technologies needed for implementing effectively high current density and high efficiency
thyssenkrupp nucera owns critical technology competencies forming the basis of AWE

Globally leading know-how to integrate adjacent technologies into CA plants forming the basis of AWE
Outstanding plant engineering capabilities are a key differentiator

Selected engineering references

- About 600 electrochemical projects were planned and realized by thyssenkrupp nucera
- +420,000 engineering hours p.a.
- +300 experts across disciplines

TÜV certification

Germany

Italy

China

Japan

Germany: +420,000 engineering hours p.a.

Italy: +300 experts across disciplines

China: +300 experts across disciplines

Japan: +300 experts across disciplines

1. FY20/21
Globally leading technologies for chlorine production

**BM single element**
- Vestolit Marl/Germany (Commissioning: 2007)
- Capacity per year: 236kt NaOH; 210kt Cl$_2$
- Installed base: 60 MW

**BiTAC filter press**
- Ningxia Risheng/China (Commissioning: 2018 & 2019)
- Capacity per year: 320kt NaOH; 298kt Cl$_2$
- Installed base: 81 MW
Leading energy saving technologies for chlorine production and recovery

**HCl-ODC (Cl\(_2\) recovery)**
Yantai Juli/China (Commissioning: 2011)
Capacity per year: 100kt Cl\(_2\)
Installed base: 15 MW

**NaCl-ODC**
Covestro Uerdingen/Germany (Commissioning: 2011)
Capacity per year: 20kt Cl\(_2\)
Installed base: 5 MW
Excellent modular solutions and services reduce cost and add value.
thyssenkrupp nucera makes a difference across every step of the industrial electrolysis value chain

1. The cell and electrolyzer shape and structure are designed for best utilization of key electrochemical components (anode and cathode coatings, separator), in terms of efficiency, products quality, durability/longevity, safety. By developing optimization of: Gas-liquid fluids handling; distribution, control of pressure fluctuations; uniform electrical current distribution and low ohmic drops; selection of corrosion-resistant materials; serviceability

thyssenkrupp nucera provides leading in-house experience along each step of the electrolysis value chain
Recap | thyssenkrupp nucera’s proven experience in Chlor-Alkali business provides a strong technology basis for AWE scale-up

<table>
<thead>
<tr>
<th>Market Readiness</th>
<th>Chlor-Alkali Electrolysis</th>
<th>Alkaline Water Electrolysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Industrial-scale installations</td>
<td>A global leader with proven experience with over 600 projects &amp; 240,000 cell elements, &gt;10 GW of electrolyzer capacity installed</td>
<td>Building on Chlor-Alkali experience to be #1 in AWE</td>
</tr>
<tr>
<td>• Proven quality supply chain</td>
<td>• Industrial-scale hydrogen plants</td>
<td>• Expand to a 5 GW supply chain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product</th>
<th>Chlor-Alkali Electrolysis</th>
<th>Alkaline Water Electrolysis</th>
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<tr>
<td>• A technology leader for electrolysis</td>
<td>• A technology leader for electrolysis</td>
<td>• Standardized AWE product with leading TCO¹</td>
</tr>
<tr>
<td>• Handling of hydrogen as a by-product</td>
<td>• Handling of hydrogen as a by-product</td>
<td>• Hydrogen as the main product</td>
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</tbody>
</table>

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<tr>
<th>Organization &amp; Network</th>
<th>Chlor-Alkali Electrolysis</th>
<th>Alkaline Water Electrolysis</th>
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<tbody>
<tr>
<td>• Holistic life cycle services</td>
<td>• Holistic life cycle services</td>
<td>• Successful service model</td>
</tr>
<tr>
<td>• Global network with partners</td>
<td>• Global network with partners</td>
<td>• Automation and digitalization</td>
</tr>
</tbody>
</table>

Key enabler of hydrogen production

¹ Total cost of ownership
Key messages | Chlor-Alkali Technology Overview

Industrial, large-scale electrolysis is the DNA of thyssenkrupp nucera

Significant technology and know-how in CA is the foundation for the technological adaption to AWE

thyssenkrupp nucera has a holistic understanding of the entire electrolysis value chain

Proven experience with over 600 projects & 240,000 electrolytic cell elements, >10 GW of electrolyzer capacity installed
7. Innovation Leadership

Fulvio Federico
thyssenkrupp nucera looks back at >30 years of leading innovation in modern industrial electrolysis

**Power Consumption**

- **1984** – **1994**
  - BM Single Element Bipolar Membrane electrolyzers
- **1997**
  - UHDENORA JV among Uhde and De Nora in 2001
  - HCl-ODC² First industrial reference plant, energy saving hydrochloric acid recycling
- **2003**
  - NaCl-ODC² Market Entry 25% energy saving CA electrolysis
- **2012**
  - BM single element Gen.3 First laser-welded cell, internals made possible acidified operation
- **2013**
  - BM single element Gen.6 First Full Zero-Gap cell incl. flexible elastic element and combined with independent sealing
- **2018**
  - tkUCE JV among thyssenkrupp electrolysis and De Nora, merging also former Chlorine Engineers Corp. in 2015
  - e-BiTac v7 and BM Gen. 6plus Latest high efficiency electrolyzers
- **2020**
  - CFI First project on new increased capacity 20 MW module
- **2021**
  - 1 GW p.a. fabrication De-bottlenecked production of 15,000 cells p.a.

**Current Density (specific production capacity)**

- **AWE**
- **CA**

1. Much longer experience before with mercury amalgam cells
2. Joint Development with Covestro and De Nora; ODC = Oxygen depolarized cathode; HCl = Hydrochloric Acid; NaCl = Sodium Chloride

Developments with De Nora advanced coatings and half-shells / bipolar elements manufacturing
Example | Successful implementation of disruptive innovations – unique advantage of thyssenkrupp nucera

25% energy saving compared to conventional CA electrolysis

Gas Diffusion Electrode (GDE) by De Nora typically used in Fuel Cells

Applied in large scale HCl-ODC electrolyzers (2003)

Applied in NaCl-ODC electrolyzers (2013)

Proprietary technology with joint development partners Covestro and Industrie De Nora; ODC = Oxygen depolarized cathode; HCl = Hydrochloric Acid; NaCl = Sodium Chloride
thyssenkrupp nucera developing an industry leading electrolyzer cell design with De Nora

Contributions thyssenkrupp nucera
- Design of cell, electrolyzer and balance of plants
- Selection of separator (membrane/diaphragm)
- Other parts including:
  - Selection of corrosion resistant materials
  - Current distribution & electrical contacts
  - Gas-liquid fluids handling & distribution
  - Sealing
  - Adaptations for different operating conditions, procedures, concepts (e.g. with or without ODC)

thyssenkrupp nucera cell

Contributions De Nora
- Anode and cathode catalytic coatings, and GDEs
- Manufacturing of half-shells

Holistic collaboration in cell design, electrochemical components and manufacturing process
thyssenkrupp nucera’s leading design and manufacturing know-how crucial in developing the AWE cell

Hydraulic design

- Improved hydraulic and fluid dynamics
- Optimized feed of reactants to the catalytic centres for effective kinetic of electrochemical reactions
- Design mitigates local concentration gradient for best efficiency and longevity

Electrical design

- Electrical current uniform distribution to the electrodes
- Uniform distribution by continuous laser welding
- Design minimizes ohmic losses

Mechanical design

- 100% leak proof cell throughout service life ensuring to avoid emissions any time
- Strong flange and bolts forces compressing the gaskets for superior sealing
- Design improves safety and environmental protection

Zero gap

- Combination of expanded-metal current distributor with a woven mesh cathode enables a “zero gap” over the whole membrane area
- Elastic element with compression independent from sealing
- “Zero gap” improves separator life and performance

Know-how and technologies needed for implementing effectively high current density and high efficiency

1. Density and efficiency assessment based on Eurochlor data
Leveraging the CA cell technology has led to the innovative AWE cell

- **No changes to the Cathode side** (still produces hydrogen)
- **Titanium and catalytic coating of Anode half-shell replaced with Nickel and different coating to produce Oxygen**
- **CA ion exchange membrane replaced by customized Diaphragm**
- **KOH (potassium hydroxide) solution is used as electrolyte on both anode and cathode sides with reduced corrosion compared to NaCl**

**With proprietary know-how and years of development, thyssenkrupp nucera’s cells can operate at much higher current densities than traditional AWE**
Product development roadmap with focus on performance and overall total cost of ownership

- **AWE 1.0 Technology**
- **2021 Incremental Development**
  - Continuous design improvements – reducing CAPEX and OPEX
- **H2Giga**
  - Serial production and automation, for cell and module fabrication at multi GW scale
- **2nd gen Electrolysis Design**
  - Disruptive next generation architecture for a quantum leap in TCO
- **2025 Plan X GW Fabrication**
  - Highly automated
  - Multiple sites

In partnership with De Nora for electrode coatings and manufacturing
Incremental developments | Continuous design improvements – reducing CAPEX and OPEX

- **Improvements** | Continuous improvements on the basis of current BM single-element cell platform

- **Optimization** | Enhancing hydrogen handling through increased pressure and other optimizations of operating conditions

- **High quality** | Implementation of advanced electro-catalytic coatings with/from partner De Nora

- **Asset light** | Reducing CAPEX and OPEX
H2Giga | Serial production and automation, for cell and module fabrication at multi GW scale

Build up more capacity, together with established and new partners

1. Cell, stack and module development
2. Optimization and scaling of manufacturing
3. Optimization and automation of assembling

Each optimization proven with solid qualification process of performance and reliability

Plan:
5 GW annual capacity
2nd Gen Electrolysis Design | Disruptive next generation architecture for a quantum leap in TCO

1. **New concepts**
   Major improvements in module and stack design, cell structure, electrodes and diaphragm

2. **Network integration**
   Integration of opportunities coming from the network of technology in the fields of materials, catalysts, solutions for dynamic operation, digitalization, automation, serviceability, scalability and sustainability

3. **Cooperation**
   Agile project design in close cooperation with customers, partner De Nora and others

thyssenkrupp nucera focusses on technology and delivers innovation with passion
Innovation Leadership for over 30 years to create world leading technology

Technology and application know-how consistently transferred from CA to Hydrogen

Achieved milestone of standardized - high power density - 20MW AWE module

Continuous improvements and disruptive new generation technology under development to further improve total cost of ownership and manufacturing, for the industrial scale mass market growth
8. Technology Service and Digitalization

Ulf Bäumer
thyssenkrupp nucera service portfolio addresses plant operator’s key priorities for large scale electrolyzers

Safety, availability and performance are at the center of thyssenkrupp nucera’s service portfolio
Services offering and digital solutions integral to thyssenkrupp nucera business model providing high recurring life-cycle revenue and addressing plant operator key priorities

Illustrative plant lifecycle

Start of operations

Service phase

Project Phase (new build)

Outlook: Performance-based support, asset management and availability guarantees (e.g. O&M contracts, Leasing, BOT)

Service revenues split

1. Build, Own, Transfer
2. Illustrative over plant lifecycle

Engineering, Consulting

Support for plant operators early on and on a continuous basis

Digital Services & Automation

Spare Parts & Single Elements

After c. 2 years regular delivery and exchange of spare parts on request

Refurbishments and Revamps (available as full service)

Large refurbishments (e.g. coatings) to start after c. 6-8 years

Leveraging thyssenkrupp nucera’s leading position & service business know-how in CA to grow AWE service

1. Build, Own, Transfer
2. Illustrative over plant lifecycle
Plant operators are provided with ongoing services to ensure safety & availability which bears significant upside from steady revenue stream as AWE capacities are being ramped up.

Illustrative service revenues from one plant ...

![Revenue Chart]

- Initial spare part package which includes spare parts for c. 2 years
- Refurbishment of the cells due to significant improvements in performance

... leading into steady revenue stream from growing base

![Revenue Chart]

Maintenance spending over plant lifetime (c. 20–30 years) estimated at ~100% of initial capex spent (excl. upgrades / revamps)¹

1. Based on management estimates in real terms for CA
Holistic service portfolio maximizes plant performance and availability

thyssenkrupp nucera service portfolio

- Digital Services, Engineering & Consulting
  - Digital twins
  - Advanced process control
  - Remote expert support
  - Studies, e.g. capacity extensions

- Spare parts
  - OEM parts
  - Electrolysis cell
  - Global supply chain

- Refurbishments and Revamps
  - On-site services
  - General plant improvements, refurbishments and revamps
  - All offered as Full Service Solutions

Unlocking thyssenkrupp nucera's growth potential

- Performance based contracts
- Asset Management
- Operation & Maintenance contracts
- Invest in key projects (BOT)

Services

- Full transparency of operating / maintenance data
- Innovative solutions
- Increased plant availability & performance

Value-add

- Consistent quality
- Build-in licensor know-how
- High plant availability

- On-site services
- General plant improvements, refurbishments and revamps
- All offered as Full Service Solutions

On top of existing portfolio additional growth potential has been identified

- New System guarantee
- Extended capacity with maximum use of existing asset reduces TCO

- Performance based contracts
- Asset Management
- Operation & Maintenance contracts
- Invest in key projects (BOT)

- Maximum involvement of licensor know-how
- Attractive financial models for investors

1. BOT: Build, own, transfer

Deep-dive on following pages
Digital solutions suite is core for new service business models

thyssenkrupp nucera acts as digital industrial catalyst connecting domain expertise & digital capabilities to engineer smarter products & services
Full-service solutions from a single source

Key Characteristics

- Maintenance, revamp or refurbishment projects executed by thyssenkrupp nucera completely
- Single point of responsibility
- New system guarantee

Customers benefit from a fully integrated offering at global scale
Building on a leading global organization with a network close to customers…

Experienced management with strong track record leading an…

- CEO: Denis Krude
- CFO: Dr. Arno Pfannschmidt
- CTO: Fulvio Federico
- Head of Green Hydrogen: Dr. Christoph Noeres
- Head of Chlor-Alkali: Dr. Roland Beckmann
- Head of Service & Innovation Center: Dr. Ulf Steffen Bäumer

Management structure

Current global headcount of > 400 (ongoing expansion)

6 local organizations operating in regional markets

- Dortmund
- Tokyo & Okayama
- Shanghai
- Houston
- Milan
- Riyadh & Perth

…organization that is worldwide close to its customers

thyssenkrupp nucera locations

Industrie De Nora partner

tk plant technology partner

1. Newly established office
De-risked and efficient ramp up and scale in AWE by leveraging existing CA offering and service business

Steady revenue stream from growing installed base provided by AWE life-cycle service business

Growth potential in digital solutions unlocked by combining technological know-how, performance optimizations and data analytics
## Capital Market Day agenda

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<tbody>
<tr>
<td>Introduction to thyssenkrupp nucera</td>
<td>Denis Krude</td>
</tr>
<tr>
<td>Business Model &amp; Corporate Strategy</td>
<td>Denis Krude</td>
</tr>
<tr>
<td>The Hydrogen Reality</td>
<td>Christoph Noeres</td>
</tr>
<tr>
<td>Alkaline Water Electrolysis Technology</td>
<td>Christoph Noeres</td>
</tr>
<tr>
<td>Q&amp;A and Break</td>
<td></td>
</tr>
<tr>
<td>The Chlor-Alkali Market</td>
<td>Roland Beckmann</td>
</tr>
<tr>
<td>Chlor-Alkali Technology – the DNA for AWE</td>
<td>Roland Beckmann</td>
</tr>
<tr>
<td>Innovation Leadership</td>
<td>Fulvio Federico</td>
</tr>
<tr>
<td>Technology Service and Digitalization</td>
<td>Ulf Bäumer</td>
</tr>
<tr>
<td>Q&amp;A and Break</td>
<td>Fulvio Federico</td>
</tr>
<tr>
<td>Manufacturing Strategy</td>
<td>Fulvio Federico</td>
</tr>
<tr>
<td>Environment, Social, Governance</td>
<td>Denis Krude</td>
</tr>
<tr>
<td>Financial Section</td>
<td>Arno Pfannschmidt</td>
</tr>
<tr>
<td>Wrap-up and Q&amp;A</td>
<td>Denis Krude</td>
</tr>
</tbody>
</table>
9. Manufacturing Strategy

Fulvio Federico
Evolution to a product-based business to most efficiently serve growing global demand

thyssenkrupp nucera business in transition from a classical project business to a future AWE product-based business

<table>
<thead>
<tr>
<th>Project business</th>
<th>Technology provider and product business</th>
<th>Key benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full customization per project</td>
<td>thyssenkrupp nucera green hydrogen business prepared for being highly standardized with 20 MW module</td>
<td>1. Standardization and serial production to achieve GW scale ensuring quality, schedule and cost optimization</td>
</tr>
<tr>
<td>Illustration</td>
<td>&gt;20 MW water electrolysis plant</td>
<td>2. Establish thyssenkrupp nucera as a key technology provider</td>
</tr>
<tr>
<td></td>
<td>Standardized 20 MW module</td>
<td>3. Reduction of complexity and risks by standardization</td>
</tr>
</tbody>
</table>

Key benefits:
1. Standardization and serial production to achieve GW scale ensuring quality, schedule and cost optimization
2. Establish thyssenkrupp nucera as a key technology provider
3. Reduction of complexity and risks by standardization
thyssenkrupp nucera provides meaningful value-add across each step of the manufacturing process.

thyssenkrupp nucera supply chain of cell components:
- Half shells manufacturing according to thyssenkrupp nucera’s IP design (De Nora)
- Electro-catalytic coating and production techniques (De Nora)
- Other cell components (e.g. separator / diaphragm, gasket frames and sealing, bolted flange, insert and distribution pipes, fittings and hoses for connection to the headers)

thyssenkrupp nucera supply chain of process & plant equipment:
- Tanks, pumps, filters
- Piping, valves & heat exchangers
- Electrical, instrumentation and control
- Power electronics

thyssenkrupp nucera assembly:
- Assembly of cells at customers’ site or at thyssenkrupp nucera workshop
- Assembly of process units at customers’ site

thyssenkrupp’s AWE business follows a holistic serial fabrication concept to capture demand.
thyssenkrupp nucera and De Nora already set up today to deliver 1 GW p.a.

thyssenkrupp nucera supply chain for cell components fully established & synchronized with De Nora to deliver 1 GW of electrolyzer p.a.
Video | How to achieve the energy transformation?

Dear renewables!
Skid-mounted chlorine plants proof thyssenkrupp nucera’s capabilities for standardization

- Standardized engineering for cost optimization
- Cost reduction by process simplification
- Reduced civil and erection works at site
- Reduced investment risks
- Very fast project schedule versus regular plants

Modularization and skid-mounted plants are a proven concept of thyssenkrupp nucera
20 MW module containerized skid-mounted configuration, transportable anywhere in the world

Applying thyssenkrupp nucera’s know-how on AWE and engineering provides an attractive solution to serve global demand
Given AWE business based on highly standardized approach, holistic serial fabrication concept necessary to capture demand

Module standardization

>20 MW water electrolysis plant

Standardized 20 MW module

Initial fabrication concept

First project to utilize international supply chain with module fabrication via external module yards in best-cost countries

Target concept for serial fabrication

Holistic thyssenkrupp nucera serial fabrication concept necessary to realize water electrolysis capacity ramp up from 1 to 5 GW per year

Next steps to fulfil expected market demand

Clear concept in place to fulfill vision to supply 5 GW of electrolyzers p.a.

1. Newly established office
Evolution to a product based business to drive cost reduction through efficient serial production driven by a growing global demand.

Supply chain of annual electrolyzer production capacity of 1 GW is already in place.

Modularization enables cost-effective solutions to deliver and erect electrolyzer modules on a global scale and at accelerated time tables.
10. ESG

Denis Krude
Sustainability is at the heart of thyssenkrupp nucera’s culture and strategy

Strategy contributing to UN Sustainable Development goals...

7 Affordable and clean energy
- thyssenkrupp nucera’s mission is to advance the widespread adoption of green hydrogen, the only zero carbon fuel

8 Decent work & economic growth
- Aspiration is to be the employer of choice, generating high-skilled, high quality employment and training opportunities

9 Industry, innovation & infrastructure
- Through engineering know-how and design of hydrogen production facilities, thyssenkrupp nucera is helping to decarbonise industrial processes

11 Sustainable cities and communities
- With its electrolyzers, thyssenkrupp nucera is helping to build the future sustainable cities, such as NEOM in Saudi Arabia

17 Partnerships for the goals
- thyssenkrupp nucera has positioned itself at the center of global coalitions, such as the Hydrogen Council and H2Global, to scale the hydrogen economy

...underpinned by robust sustainability commitments

1 Commitment to calculate and report greenhouse gas emissions

2 Commitment to employee health & safety

3 Commitment to responsible procurement practices

4 Commitment to strong governance standards, including diversity, transparency and accountability
### Introduction to thyssenkrupp nucera’s governance structure

#### Key elements of thyssenkrupp nucera’s KGaA^1^ structure

<table>
<thead>
<tr>
<th>Legal form of General Partner</th>
<th>Ownership threshold</th>
<th>Approval rights of management</th>
<th>Shareholder rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Aktiengesellschaft (AG)</td>
<td>• KGaA to be converted into AG structure if combined thyssenkrupp and De Nora ownership falls below 40%</td>
<td>• Supervisory Board of General Partner</td>
<td>• Regular shareholder rights</td>
</tr>
</tbody>
</table>

#### Background & rationale

- Safeguards free float shareholders’ interests, while recognizing thyssenkrupp’s intention to keep thyssenkrupp nucera as key part of the group

- Several successful precedents of publicly listed German KGaAs

- Providing operational autonomy to thyssenkrupp nucera…

- …whilst reflecting long term partnership with both thyssenkrupp and De Nora

---

1. Kommanditgesellschaft auf Aktien (partnership limited by shares)
thyssenkrupp nucera’s mission statement is aligned with the UN Sustainable Development goals to create long-lasting impact.

KGaA structure provides operational autonomy to thyssenkrupp nucera whilst reflecting long-term commitment with key shareholders thyssenkrupp and De Nora.
11. Financial Section

Arno Pfannschmidt
thyssenkrupp nucera provides for an attractive financial profile ready to scale up

AWE
AWE ready for scale-up and exponential profitable growth

CA
Stable business with best-in-class technology and ~50% service share
AWE contracted order backlog includes global first mega-scale hydrogen project among others

- Contracted AWE order backlog includes 5 projects
- One of world’s largest green hydrogen projects NEOM signed in December 2021
- Latest project win is Shell signed in December 2021
- Additional CA contracted order backlog of ~0.4 bn €

thyssenkrupp nucera won the NEOM mega-scale project as supplier of its AWE technology

Preliminary data as of 31 December 2021
thyssenkrupp nucera has the largest AWE contract backlog compared to green hydrogen peers. 

Recently meaningful industrial scale projects have been contracted and there is more to come. 

1. Based on publicly available information as of December 2021
2. For further details please refer to the thyssenkrupp press release as of 10 January 2022
AWE pipeline continues to grow across many countries for industrial-scale projects

- Huge project pipeline
- Substantial pipeline covers entire pool of projects based on initial customer interaction
- Focused on strategically important and tangible projects based on clear criteria
- Additional projects to be pursued based on capacity

### Substantial Pipeline

- **90 projects**
- **100 MW** median project size
- **>13 bn €** Potential contract value
- **~33 GW** Aggregated size

### Actively Pursued Projects

- **16 projects**
- **~90 MW** average project size
- **>0.8 bn €** Potential contract value
- **>1.4 GW** Aggregated size

---

Data as of 31 December 2021

1. Projects which thyssenkrupp nucera had first interactions with & that are being monitored closely
2. Projects which already passed the pursue / non-pursue gate
Overview of thyssenkrupp nucera financial reporting

Segment overview

thyssenkrupp nucera
- Currently represented by 5 legal entities with dedicated P&L responsibility
- Fiscal year end September 30th

Germany
Italy
Japan
China
Rest of World

Product groups overview

AWE
- New build projects
- First meaningful projects booked in FY20/21
- Service for AWE to ramp-up

CA
- New build projects
- Historically over 600 realized projects
- Ongoing service and maintenance of electrolysis plants

Segment reporting is centered around thyssenkrupp nucera’s main locations

1. As of 30 September 2021 US only while new legal entities in Australia and Saudi Arabia are in the process of being established
Group | Stable Order Intake and Sales with strong growth in FY20/21

Key financials (mn €)

<table>
<thead>
<tr>
<th>Order Intake</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY18/19</td>
<td>244</td>
</tr>
<tr>
<td>FY19/20</td>
<td>255</td>
</tr>
<tr>
<td>FY20/21</td>
<td>319</td>
</tr>
</tbody>
</table>

Order Intake
- First meaningful AWE projects have been booked in FY20/21
- The NEOM and Shell projects have been signed post Sep-21 and will be reflected in Q1

Sales
- FY20/21 Sales follows strong previous Order Intake

thyssenkrupp nucera's AWE business has realized first meaningful Order Intake and Sales in FY20/21
Group | Balanced global footprint represented by thyssenkrupp nucera’s segments

FY20/21 Sales by segment

- Germany: 55%
- China: 14%
- Italy: 13%
- Japan: 12%
- RoW: 6%

FY20/21 Sales by destination

- Americas: 12%
- MENA: 35%
- APAC: 32%
- Europe: 11%
- RoW: 6%

Global business with existing footprint to reach customers worldwide

1. External sales  2. Indicative split

• Germany is the largest segment with Sales predominantly in Europe and MENA
• Global reach and balanced geographical Sales by destination
**Group | Consistently profitable operations**

### Key financials (mn €)

<table>
<thead>
<tr>
<th></th>
<th>FY18/19</th>
<th>FY19/20</th>
<th>FY20/21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EBIT(^1)</strong></td>
<td>10.6%</td>
<td>10.5%</td>
<td>8.4%</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td><strong>EBITDA(^2)</strong></td>
<td>12.1%</td>
<td>11.8%</td>
<td>9.4%</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

- Margins in FY20/21 include AWE ramp-up costs
  - Increased SG&A expenses due to first AWE orders
  - Increased R&D costs (which are fully recognised in P&L) in FY20/21 to drive AWE development
- D&A in line with asset light business model

**Stable historic margin profile with slight dip in FY20/21 due to AWE ramp-up**

---

1. Refers to income from operations
2. Income / (loss) from operations plus depreciation, amortization and impairment of non-current assets
**Group | Cash generating business with certain working capital swings**

### Key financials (mn €)

<table>
<thead>
<tr>
<th></th>
<th>FY18/19</th>
<th>FY19/20</th>
<th>FY20/21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in Net Working Capital(^2)</td>
<td>(30)</td>
<td>(13)</td>
<td>18</td>
</tr>
<tr>
<td>(29)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>(11)</td>
<td>4</td>
<td>37</td>
</tr>
<tr>
<td>Investing cash flow</td>
<td>0.1</td>
<td>(1.4)</td>
<td>0.1</td>
</tr>
</tbody>
</table>

1. As per Balance Sheet and defined as: Inventories + Trade account receivables + Contract assets – Trade accounts payable – Contract liabilities
2. As per Cash Flow Statement and defined as: Changes in assets and liabilities, net of non-cash effect, for Inventories, Trade accounts receivable, Contract assets, Trade accounts payable, Contract liabilities

**Historic Net Working Capital profile driven by CA business’ pre-payments**

- Historic negative NWC driven by pre-payments
- Investing cash flow includes limited capex requirements given thyssenkrupp nucera’s asset light business model
Group | Use of targeted IPO primary proceeds and pro-forma capital structure

Capital structure as of September 2021 (mn €)

<table>
<thead>
<tr>
<th>Cash and cash equivalents and tk Group cashpool receivables</th>
<th>Financial debt¹</th>
<th>Accrued pension and similar obligations</th>
<th>Net cash</th>
<th>Targeted IPO primary proceeds</th>
<th>Net cash plus primary proceeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>5</td>
<td>8</td>
<td>187</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Healthy balance sheet ready to scale-up AWE with additional primary proceeds from IPO**

- Strong and well capitalised balance sheet driven by profitable operations and advance payments in CA
- Targeted IPO primary proceeds of 500-600 mn €:
  - Funding of strong AWE growth (R&D and capex)
  - Strengthening of the financial position to meet counterparty requirements
  - Ability to deliver on large scale projects incl. provision of required guarantees
- Optionality for secondary offering

¹ Includes lease liabilities current and non-current and other financial liabilities
thyssenkrupp nucera is committed to its financial targets

**AWE**

<table>
<thead>
<tr>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>600 mn € – 700 mn €</strong> Sales by FY24/25</td>
</tr>
<tr>
<td>• Service Sales are expected to ramp up <strong>6-8 years</strong> after installation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EBIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Break-even around FY23/24</strong></td>
</tr>
<tr>
<td>• In the long-term increase to <strong>low double digit margin</strong> also driven by increasing service share</td>
</tr>
</tbody>
</table>

**CA**

<table>
<thead>
<tr>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sales reflect project business related Order Intake movements, expected at around <strong>300 mn € by FY25/26</strong></td>
</tr>
<tr>
<td>• Thereafter, expected to grow <strong>in line with GDP</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EBIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Mid-term target to achieve <strong>high single-digit EBIT margin</strong></td>
</tr>
</tbody>
</table>

**Group**

<table>
<thead>
<tr>
<th>R&amp;D expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Aggregate R&amp;D expense between FY21/22 and FY24/25 is expected to amount to <strong>50 mn € – 100 mn €</strong> (reflected in EBIT margin)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Aggregate Capex between FY21/22 and FY24/25 is expected to amount to <strong>150 mn € – 200 mn €</strong> (incl. investments in technology)</td>
</tr>
<tr>
<td>• NWC expected to increase slightly into <strong>positive territory</strong> over time</td>
</tr>
<tr>
<td>• Free cash flow <strong>break-even</strong> expected around FY25/26</td>
</tr>
</tbody>
</table>

---

Financial targets reflecting thyssenkrupp nucera’s attractive positioning and strong order backlog in AWE

EBIT and EBIT margin on product group level are not expected to be reported as part of the segment reporting in the near future
Focus on AWE growth will fundamentally change the scope of thyssenkrupp nucera in the years to come.

Historically profitable business model driven by equipment and service in CA.

Ambition to drive AWE and achieve ~600 mn € - 700 mn € of Sales by around FY24/25 with continued growth thereafter based on strong market demand.

Recently signed contracts for NEOM and Shell with >2.2 GW contract volume demonstrate thyssenkrupp nucera’s technology leadership and competitiveness in AWE.
Wrap-up and Q&A

Denis Krude
thyssenkrupp nucera growth story

- A technology leader for industrial scale electrolyses
- High growth water electrolysis market
- Largest\(^1\) contracted backlog: \(\sim 0.9 \text{ bn } \€ / > 2.2 \text{ GW}\)
- AWE sales target of 600 mn € - 700 mn € by around FY24/25
- EBIT break-even around FY23/24 related to AWE
- Highly experienced management team

---

\(^1\) As of 31 December 2021 based on publicly available information.
Appendix
KGaA structure will enable thyssenkrupp & De Nora to support strategy post listing, while enabling thyssenkrupp nucera to pursue its own commercial objectives

Overview of KGaA Structure and Governance

**AG & Co. KGaA**

- **thyssenkrupp AG**
  - 66%
  - Management AG (General Partner)
    - General Meeting appoints
      - Supervisory Board: 4x thyssenkrupp Representatives, 3x De Nora Representatives
      - Management Board: Denis Krude, Arno Pfannschmidt, Fulvio Federico
    - Supervisory Board appoints
      - Management Board: restricted supervision
  - Freefloat
    - Supervisory Board: 2x Independents, 7x tk Representatives, 3x De Nora Representatives

**De Nora**

- 34%
- General Meeting appoints
  - Supervisory Board: 3x De Nora Representatives

KGaA supports thyssenkrupp nucera’s strategy & long-term partnerships

- Balanced Supervisory Board composition:
  - 2x independent members
  - 7x thyssenkrupp representatives
  - 3x De Nora representatives

- Shareholder relationship between thyssenkrupp nucera, De Nora and thyssenkrupp, including key governance, financing and oversight matters, to be set out in Shareholders Agreement

- Cooperation between thyssenkrupp nucera, thyssenkrupp and De Nora to be provided by in a Relationship Agreement as well as in Service and Toll Manufacturing Agreements (Cooperation Agreements)
## Group | Summary Income Statement

<table>
<thead>
<tr>
<th>(in mn €)</th>
<th>FY18/19A</th>
<th>FY19/20A</th>
<th>FY20/21A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>243.7</td>
<td>254.7</td>
<td>319.1</td>
</tr>
<tr>
<td>% growth</td>
<td>n/a</td>
<td>4.5%</td>
<td>25.3%</td>
</tr>
<tr>
<td>Cost of sales</td>
<td>(184.5)</td>
<td>(196.5)</td>
<td>(250.8)</td>
</tr>
<tr>
<td>% of sales</td>
<td>75.7%</td>
<td>77.2%</td>
<td>78.6%</td>
</tr>
<tr>
<td>Gross margin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% margin</td>
<td>24.3%</td>
<td>22.8%</td>
<td>21.4%</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>(6.2)</td>
<td>(6.8)</td>
<td>(10.7)</td>
</tr>
<tr>
<td>SG&amp;A</td>
<td>(22.1)</td>
<td>(20.3)</td>
<td>(26.6)</td>
</tr>
<tr>
<td>Other income /(expense), net</td>
<td>(4.9)</td>
<td>(4.3)</td>
<td>(4.1)</td>
</tr>
<tr>
<td>EBIT(^1)</td>
<td>25.9</td>
<td>26.7</td>
<td>26.9</td>
</tr>
<tr>
<td>% margin</td>
<td>10.6%</td>
<td>10.5%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Financial income /(expense), net</td>
<td>1.1</td>
<td>0.8</td>
<td>(0.2)</td>
</tr>
<tr>
<td>Income tax expenses</td>
<td>(6.5)</td>
<td>(5.9)</td>
<td>(5.4)</td>
</tr>
<tr>
<td><strong>Net income</strong></td>
<td>20.5</td>
<td>21.7</td>
<td>21.3</td>
</tr>
</tbody>
</table>

1. Refers to income from operations
<table>
<thead>
<tr>
<th></th>
<th>FY18/19A</th>
<th>FY19/20A</th>
<th>FY20/21A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net income</strong></td>
<td>20.5</td>
<td>21.7</td>
<td>21.3</td>
</tr>
<tr>
<td><strong>Depreciation &amp; amortisation</strong></td>
<td>3.4</td>
<td>3.3</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Change in NWC(^1)</strong></td>
<td>(28.7)</td>
<td>(13.2)</td>
<td>18.3</td>
</tr>
<tr>
<td><strong>Other operating cash flow</strong></td>
<td>(6.2)</td>
<td>(7.5)</td>
<td>(6.1)</td>
</tr>
<tr>
<td><strong>Operating cash flow</strong></td>
<td>(11.0)</td>
<td>4.3</td>
<td>36.6</td>
</tr>
<tr>
<td><strong>Capital expenditures</strong></td>
<td>(0.9)</td>
<td>(1.8)</td>
<td>(0.3)</td>
</tr>
<tr>
<td><strong>Proceeds from disposals</strong></td>
<td>1.0</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Investing cash flow</strong></td>
<td>0.1</td>
<td>(1.4)</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Dividends paid to equity holders</strong></td>
<td>(43.4)</td>
<td>(10.9)</td>
<td>(3.1)</td>
</tr>
<tr>
<td><strong>Proceeds from/(repayments on) loan notes and other loans</strong></td>
<td>49.5</td>
<td>1.8</td>
<td>(25.3)</td>
</tr>
<tr>
<td><strong>Other financing cash flow</strong></td>
<td>(1.9)</td>
<td>(2.0)</td>
<td>(2.0)</td>
</tr>
<tr>
<td><strong>Financing cash flow</strong></td>
<td>4.2</td>
<td>(11.1)</td>
<td>(30.4)</td>
</tr>
<tr>
<td><strong>Effect of exchange rate changes</strong></td>
<td>1.3</td>
<td>(0.4)</td>
<td>(0.0)</td>
</tr>
<tr>
<td><strong>Net increase/(decrease) in cash and cash equivalents</strong></td>
<td>(5.4)</td>
<td>(8.7)</td>
<td>6.3</td>
</tr>
</tbody>
</table>

1. As per Cash Flow Statement and defined as: Changes in assets and liabilities, net of non-cash effect, for Inventories, Trade accounts receivable, Contract assets, Trade accounts payable, Contract liabilities
## Summary Balance Sheet assets

<table>
<thead>
<tr>
<th>(in mn €)</th>
<th>FY18/19A</th>
<th>FY19/20A</th>
<th>FY20/21A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property, plant and equipment</td>
<td>11.6</td>
<td>10.5</td>
<td>8.2</td>
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<tr>
<td>Goodwill</td>
<td>58.1</td>
<td>57.0</td>
<td>57.2</td>
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<tr>
<td>Intangible assets other than goodwill</td>
<td>2.3</td>
<td>1.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Other non-current assets</td>
<td>6.8</td>
<td>5.4</td>
<td>7.8</td>
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<tr>
<td><strong>Total non-current assets</strong></td>
<td><strong>78.8</strong></td>
<td><strong>74.6</strong></td>
<td><strong>74.5</strong></td>
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<tr>
<td>Inventories</td>
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<td>91.0</td>
<td>61.3</td>
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<tr>
<td>Trade accounts receivable</td>
<td>25.7</td>
<td>37.8</td>
<td>38.3</td>
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<tr>
<td>Contract assets</td>
<td>4.8</td>
<td>4.1</td>
<td>16.1</td>
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<tr>
<td>Cash and cash equivalents and tk Group cashpool receivables</td>
<td>219.4</td>
<td>167.3</td>
<td>200.2</td>
</tr>
<tr>
<td>Other current assets</td>
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<td>15.3</td>
<td>25.2</td>
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<tr>
<td><strong>Total current assets</strong></td>
<td><strong>349.8</strong></td>
<td><strong>315.4</strong></td>
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<tr>
<td><strong>Total assets</strong></td>
<td><strong>428.6</strong></td>
<td><strong>390.1</strong></td>
<td><strong>415.6</strong></td>
</tr>
<tr>
<td>(in mn €)</td>
<td>FY18/19A</td>
<td>FY19/20A</td>
<td>FY20/21A</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Equity attributable to equity holders</td>
<td>216.8</td>
<td>183.5</td>
<td>203.4</td>
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<tr>
<td>Accrued pension and similar obligations</td>
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<td>7.5</td>
<td>8.0</td>
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<tr>
<td>Other provisions</td>
<td>4.7</td>
<td>3.9</td>
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<tr>
<td>Deferred tax liabilities</td>
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<tr>
<td>Lease liabilities</td>
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<td>3.7</td>
<td>2.3</td>
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<tr>
<td><strong>Total non-current liabilities</strong></td>
<td><strong>19.8</strong></td>
<td><strong>18.7</strong></td>
<td><strong>20.9</strong></td>
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<tr>
<td>Trade accounts payable</td>
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<td>Contract liabilities</td>
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<td>130.1</td>
<td>115.1</td>
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<tr>
<td>Lease liabilities and other financial liabilities</td>
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<td>2.4</td>
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<td><strong>187.9</strong></td>
<td><strong>191.3</strong></td>
</tr>
<tr>
<td><strong>Total equity and liabilities</strong></td>
<td><strong>428.6</strong></td>
<td><strong>390.1</strong></td>
<td><strong>415.6</strong></td>
</tr>
</tbody>
</table>