Setup and Strategy

Organization and Go to Market to Support Chemical, Glass and Oil & Gas Industries

December 8, 2022

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Agenda

- Introduction
- Global Structure and Responsibility
- US Roles and Responsibilities
- Growth Initiatives
- Open Discussion

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Doug Child - Bio

Education/Licenses

- B.S. Mechanical Engineering – Lafayette College, Easton, PA
- M.B.A. – Finance – Saint Mary's College – Moraga, CA
- Professional Engineer, Control Systems Engineering, State of California

Career Moore Products/Siemens

- Engineer-in-Training – 1979-1980 Moore Products Co. Spring House, PA
- Sales Engineer – 1980-1984 Los Angeles, CA
- District Sales Manager – 1984-1992 San Francisco, CA
- Regional Sales Manager – West Region -1992-1998 San Francisco, CA
- Managing Director, Asia Pacific – 1998-2000 Singapore
  Moore Products Co. Acquired by Siemens – 2000
- DCS National Sales Manager US – 2000-2001 Spring House, PA
- US Chemical Industry Sales Manager – 2001-2004 Spring House, PA
- Head of US Chemical Center of Competence – 2004-2010 Spring House, PA
- Director, US DCS and Vertical Sales – 2010-2014 Spring House, PA
- Director, US Chemical, Glass, O&G VM – 2014-Present Spring House and Harleysville, PA

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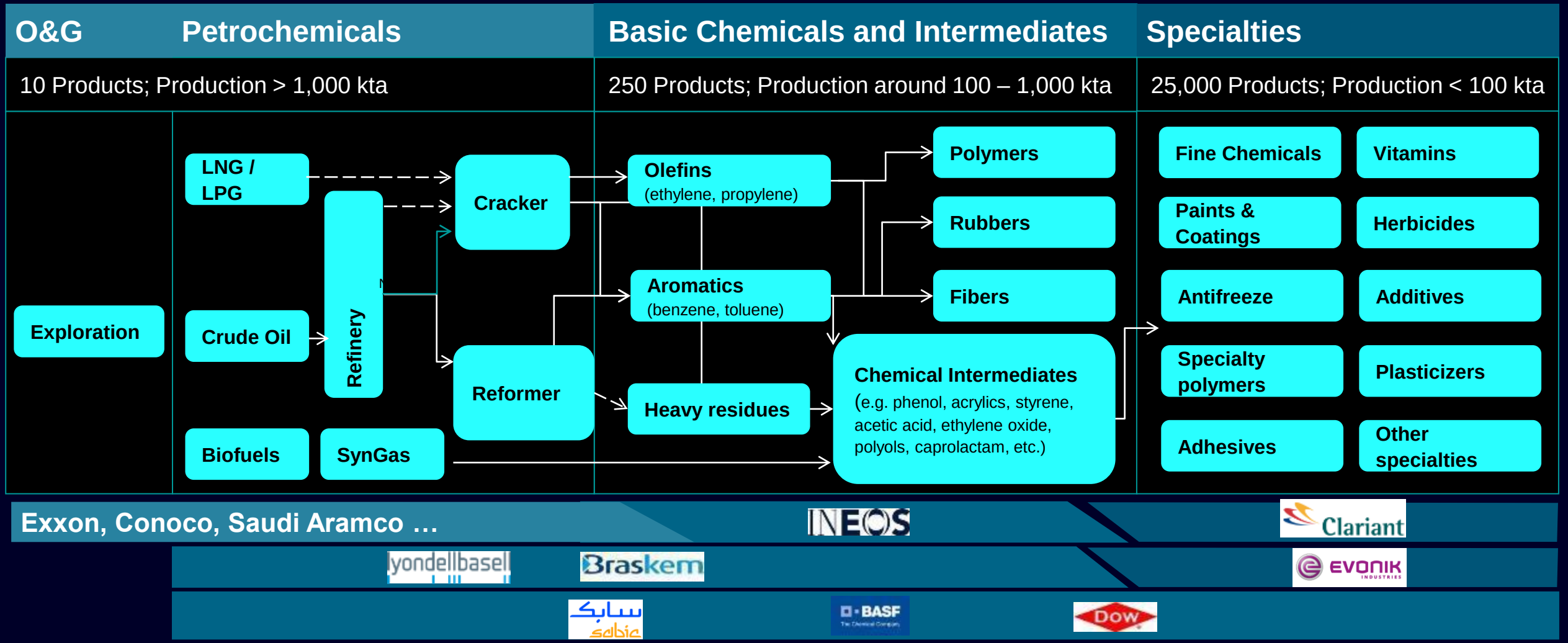
Overview of the Chemical Industry - significant segmentation and product diversification



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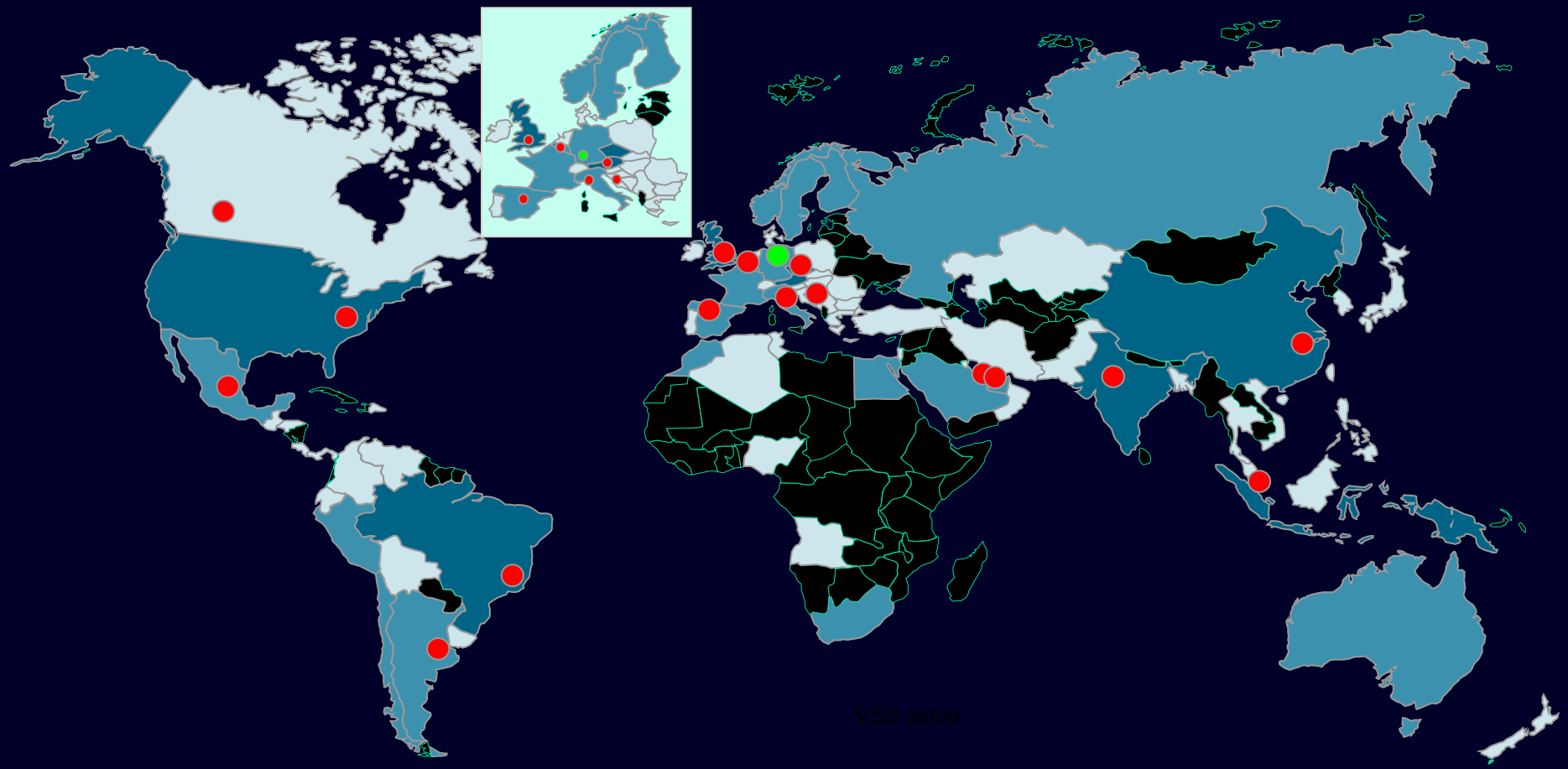
Siemens Vertical for Oil & Gas/Chemical:
Present at the global hotspots of the Process Industry

16 regional vertical teams to deliver technological expertise for the process industry



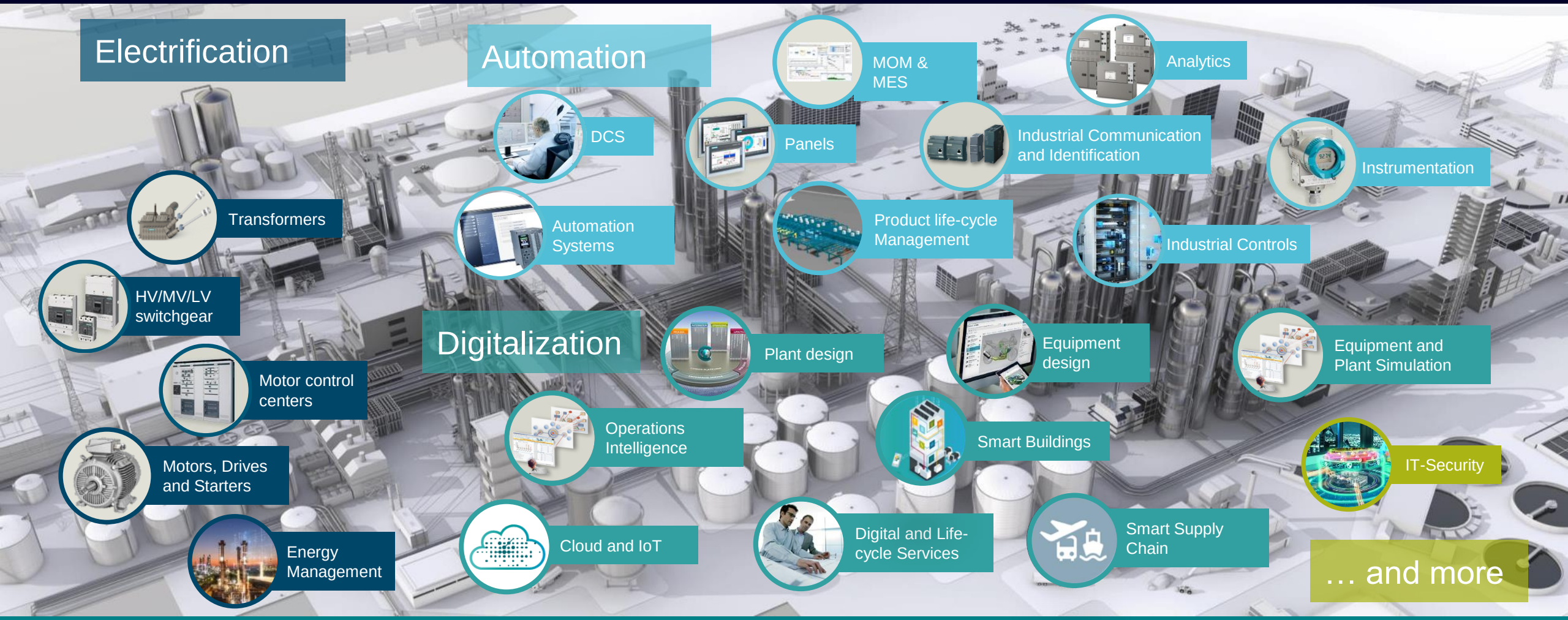
Global network to serve international customers and support international projects

Siemens Chemical Vertical is responsible for coordination of activities with chemical key customers

Vertical Business Mandate

- ***Coordinate business activities*** for chemical Key Accounts on a global base.
- ***Leverage global setup and network*** to increase value delivered to leading chemical companies.
- *Support* ***international projects***
- ***Support development of Industry portfolio and technological concepts*** with industry specific knowledge.
- ***Digitalization applications and consulting*** *for Chemical Industry*

We support the Chemical Industry with Electrification, Automation & Digitalization



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SVM Chemicals
Overview Corporate Account Manager (CAM)

Lutfi Alshammasi[3)]

سابك sabic | MA'ADEN | ارامكو السعودية Saudi Aramco

Wolfgang Baur

EVONIK Leading Beyond Chemistry | Celanese The chemistry inside innovation

Dieter Broeckl

Linde | WACKER

Rich Caputo

AIR PRODUCTS

Alan Ellerbusch

DUPONT | Chemours | AXALTA | CORTEVA agriscience | lyondellbasell

Xin Feng

SINOPEC | CNPC

Wolfgang Froelian

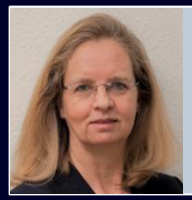
BASF We create chemistry

Al Kamczyc (3)

DOW | ExxonMobil

Dieter Koenz

Henkel | CLARIANT



Ulrike Lehnhof

BAYER | covestro | LANXESS

3) will retire in the upcoming months, nomination of successor in process

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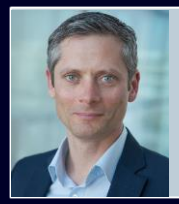
SVM Chemicals
Overview Global Account Manager (GAM)



Michael Nissel

BOREALIS Keep Discovering

OMV

Benjamin Cognet

Air Liquide

ARKEMA

SOLVAY

Jean-Marc Diss

VINCI

James Hendrix

Linde

Jan van Heeswijk

AkzoNobel

Nouryon

DSM

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Organisation Headquarters – DI PA Chemicals, Glass, Oil & Gas

DI PA CGO

Dr. Frauke Jordt * — **Khe S 0172 350 9166**
Sabina Hübsch — Khe S 0162 422 3398

DI PA SO FIN 1

Marcus Rathai — **Khe S 0172 846 8843**
Philipp Matzenbacher — Khe S 0172 421 5832

DI PA CGO 2

Olaf Derr — **KHE S 0152 5469 0350**
CHEM KAM / EPC / FA and Project Development

Paul Boes — **KHE S 0173 720 2357**
RC-US, BR, AR, DuPont, ConocoPhillips, Chemours Air Products, Corteva, Axalta, LyondellBasell

Dr. Peter Carvalho — **KHE S 0172 665 8626**
BE, Wacker, Vinci, SroVIP

Michael Densborn — **KHE S 0172 721 3271**
RC-DE, BASF, Evonik, Celanese

Dr. Jörg Jakobi — **KHE S 0173 219 7871**
RC-DE, Lanxess, Bayer, Covestro

Claude Pfeiffer — **KHE S 0172 362 8657**
FR, Arkema, Solvay, AL

M. v. Reitzenstein-Dehler — **KHE S 0173 707 4435**
RC-GB, Nordics, NL, DSM INEOS, Akzo, Nouryon, Clariant, Paints & Coatings

Jürgen Ruppert — **KHE S 0173 320 8911**
ES, IT, MX, Linde

Kamena Slivkova — **KHE S 0173 252 0071**
LCB-AT, Borealis, OMV

Ralf Wessbecher — **KHE S 0152 5469 1357**
RC-US, RC-CA, DOW, ExxonMobil

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Jan Rougoor — **KHE S 0173 246 2398**
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Claus Bartetzko — **KHE S 0172 721 1923**
LCB-AE (NME), SaudiAramco, SABIC, W2E

Jens Bullack — **KHE S 0172 267 5738**
RCA, Sibur, Luckoil

Mustapha Ghani — **KHE S 0173 546 7617**
ASEAN, KR, JP

Harald Kohl — **KHE S 0172 133 9360**
IND

Inoslav Loncarevic — **KHE S 0152 0162 1847**
AFR/AUS, TR, Fertilizer, OCP, Yara, TKIS

Dr. Thomas Mohr — **KHE S 0174 2210857**
Wood Cooperation, Petrochem
Large Bid Coordination

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Peter Baldermann — **KHE S 0152 2432 8641**
SISW, Opcenter collaboration

DI PA CGO 4

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AT, CH, US, Glass processing, Corning, Owens Corning, RHIM

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Jean-Marc Diss [3] — **0033 6640 59800**
GAM Vinci

Marketing [2]
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DI PA SO AI CG [4]
Joachim Walz — **KHE S 01522 2630083**

* **SVM-Manager Chemicals**
[1] **SVM Chem Operations Manager**
[2] **disciplinary by DI PA S&V MK** **A. Lüdecke**
[3] **disciplinary by RC-FR DI PA** **V. Jauneau**
[4] **disciplinary by DI PA SO AI** **O. Krapp**

Digital Industries, Process Automation
Subsegments Vertical
Work schedule: DI PA CGO
Version: June 2022

Work schedule only, valid organization chart is deposited in SOC

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Consulting, Standardization

Frank Opalla — **KHE S 0174 151 0218**
Integrated Engineering

Christian Pust — **KHE S 0173 295 9654**
MOM, Smart Batch Plants

Thomas Kuhlmann — **KHE S 0173 295 1474**
Batch, NOA, MTP, Digitalization

DI PA CGO 6

Bernd Kalusche — **KHE S 0173 170 3387**
O&G / H2 Initiatives

Katharina Auth [1] — **KHE S 0173 207 4004**
SVM/VM Chemicals

Hubertus Böhm — **KHE S 0173 258 4105**
Clean Hydrogen

Shuvro Chakrabarty — **KHE S 0172 737 4596**
LNG, FPSO

Silvia Doppler — **KHE S 0162 311 4618**
VM Oil & Gas

Andreas Glogowsky — **KHE S 0172 323 5117**
GAM Siemens Energy

Hans-Jürgen Huber — **KHE S 0173 347 7955**
Pipeline, Biofuels

Marvin Lehel — **KHE S 0162 415 6365**
Tank Farm

DI PA CGO 5 1

Sven Kempf — **KHE S 0172 671 1361**
Process Automation

Volker Hirsch — **KHE S 0173 723 8210**
Bio Chemicals, DCS, Safety, Instrumentation

Dr. Otmar Lorenz — **KHE S 0173 328 2030**
APC, Process Simulation, OTS, Chemical Training

Manuel Müller — **KHE S 0175 223 0292**
Glass Technology, TIA, DCS & SCADA, MTP

Olaf Schnur — **KHE S 0172 587 3162**
Migration Concepts, DCS and communication

Martina Walzer — **KHE S 0172 278 9880**
Vendor Listing, Sustainability, Training

DI PA CGO 5 2

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Monica Hildinger — **KHE S 0162 294 5395**
Digitalization, Cloud Application

Dr. Christiane Jaeckle — **ERL M 0152 2250 1775**
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Andreas Kappler — **KHE S 0173 545 1917**
MES / MOM, Vert.Int., PCS 7, Cloud-Application

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Ulrike Schulschenk — **KHE S 0162 428 2639**
Digitalization, COMOS Cloud Application

* **SVM-Manager Chemicals**
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[4] **disciplinary by DI PA SO AI O. Krapp**

Digital Industries, Process Automation
Subsegments Vertical
Work schedule: DI PA CGO
Version: June 2022

Work schedule only, valid organization chart is deposited in SOC

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DI PA Vertical Markets
Chemical, Glass, and Oil and Gas

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Vertical Management Chemicals, Glass & Solar, Oil & Gas (CGO)

CGO is focusing on growth opportunities to address customer needs

Industry Drivers

- Safety & Security
- Environmental Impact
- Plant Efficiency
- Aging workforce
- Smart Data

VM Chemicals, Glass & Solar, Oil & Gas Initiatives

Failsafe systems, Network security

Operator Training Systems

Asset Health & Performance APPs

Integrated Engineering

Modular Plants, OEMs

Industry Initiatives

Data Analytics & Consulting

Process and Plant Digital Twin

Mobile/Digital Worker

Results

- Awareness Trusted partner
- Digital Frontrunner
- Projects & Global Agreements
- Leverage growth in new markets

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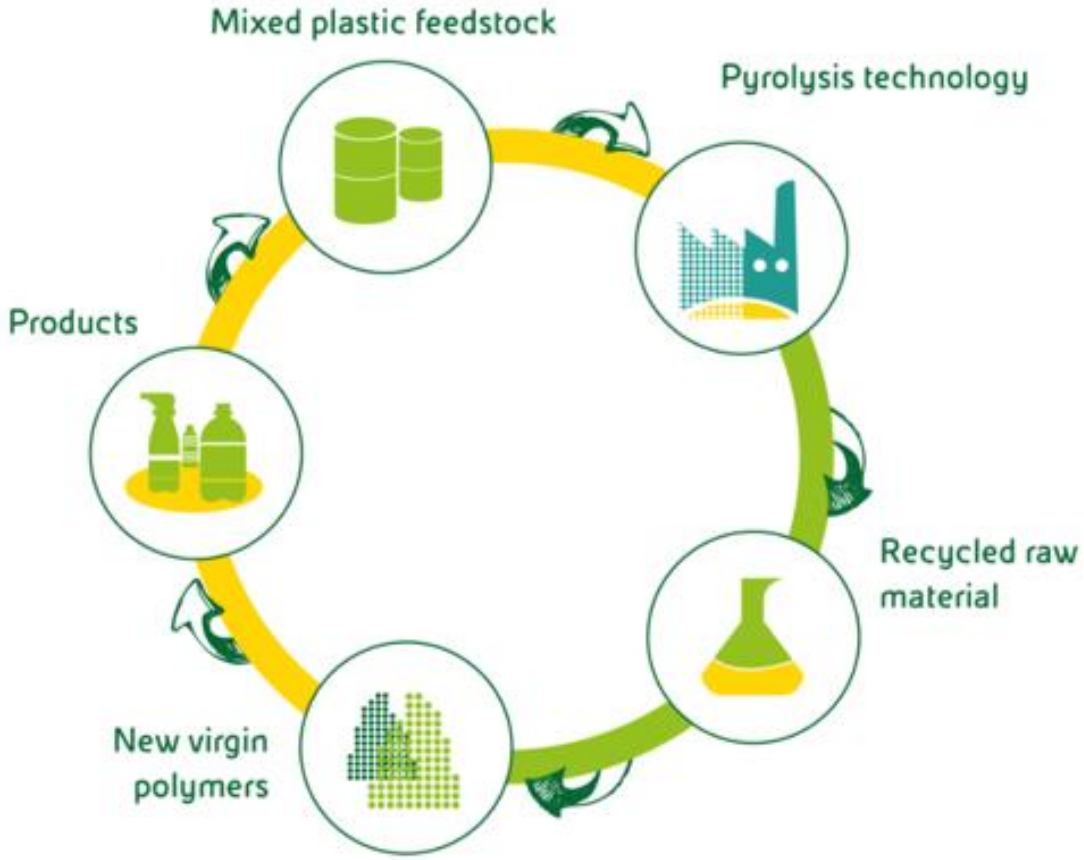
VM CGO
“Sustainable Chemistry”

- Exploring new subsectors in the chemical industry
- Enlarging customer base with new customers and processes:
  - **Chemical recycling** in the circular economy (plastics, tires, waste,…), refeeding the chemical processes (re-oil)
  - Chemical processes for **battery production & recycling**
  - **Biochemicals**: alternative feedstock as base for chemicals, substitute of crude oil, naphtha and gas
  - **Carbon capture**, feedstock for chemical processes
  - Product and Solution business
  - Link to Website: https://new.siemens.com/global/en/markets/chemical-industry/applications/chemical-recycling.html



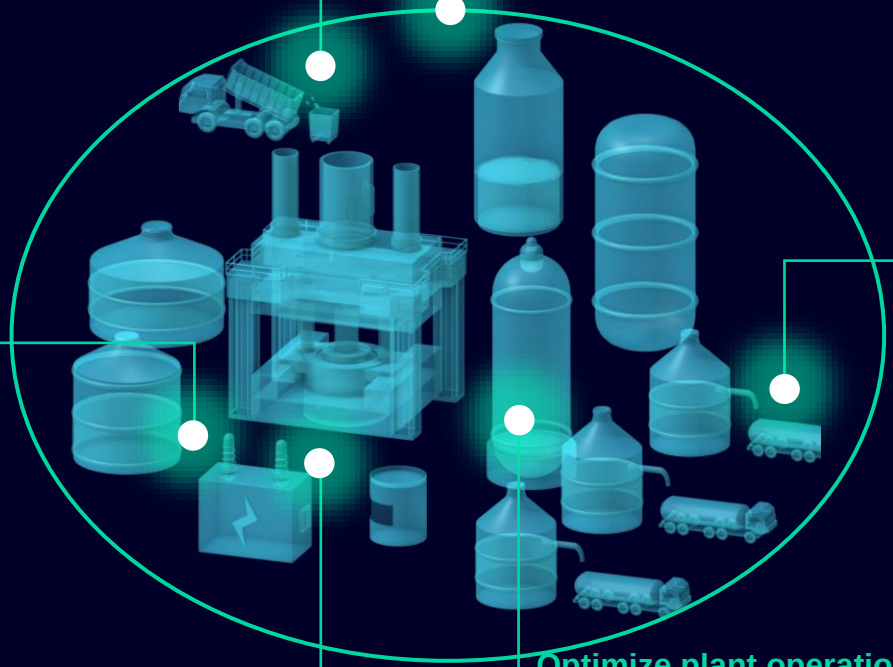
Chemical recycling
Siemens Automation offering along the entire process chain

Automation for pre-processing of plastic feedstock
=> Optimizing feedstock quality as pre-requisite for efficient and reliable plant operation

- SIMATIC S7 PLC´s
- SIMATIC Industrial PC´s
- HMI-panels
- Integration into plant-wide control system

Distributed control system managing all control tasks of the entire plant with **highest flexibility**

- State of the art Distributed control systems PCS 7 / PCS Neo
- Flexible integration of sub-systems through MTP (Modular Type Package) concept



Control feedstock input into reactor
- automation of gravimetric dosing

- SIMATIC S7 PLC´s
- SIWAREX weighing systems
- Integration into plant-wide control system

Truck loading and tank management
=> ensure safe operation and exact traceability for commercial purpose

- Siemens TMS (Terminal Management) solution
- OpCenter MES system, ERP integration
- Tank management specific instrumentation solutions

Robust and safe production with
Functional Safety to protect people and environment

- Simatic S7 functional safety
- Open System, integrated in DCS or separate
- Scalable, flexible and highly available

Optimize plant operation in unstable/varying conditions
=> dynamic adjustment of control parameters

- Model predictive control implementation
- Siemens MPC solution embedded in PCS 7 DCS

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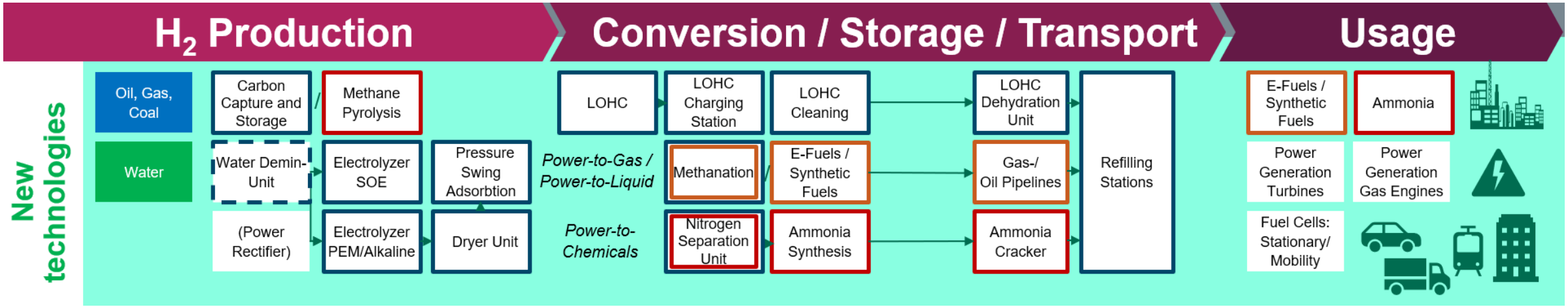
VM CGO
"VM Hydrogen"

- Develop **product business** with **package unit builders** / OEMs along the "Clean Hydrogen" value chain
- **Solution business** for integration/orchestration projects
- Digital twin solution / simulation projects



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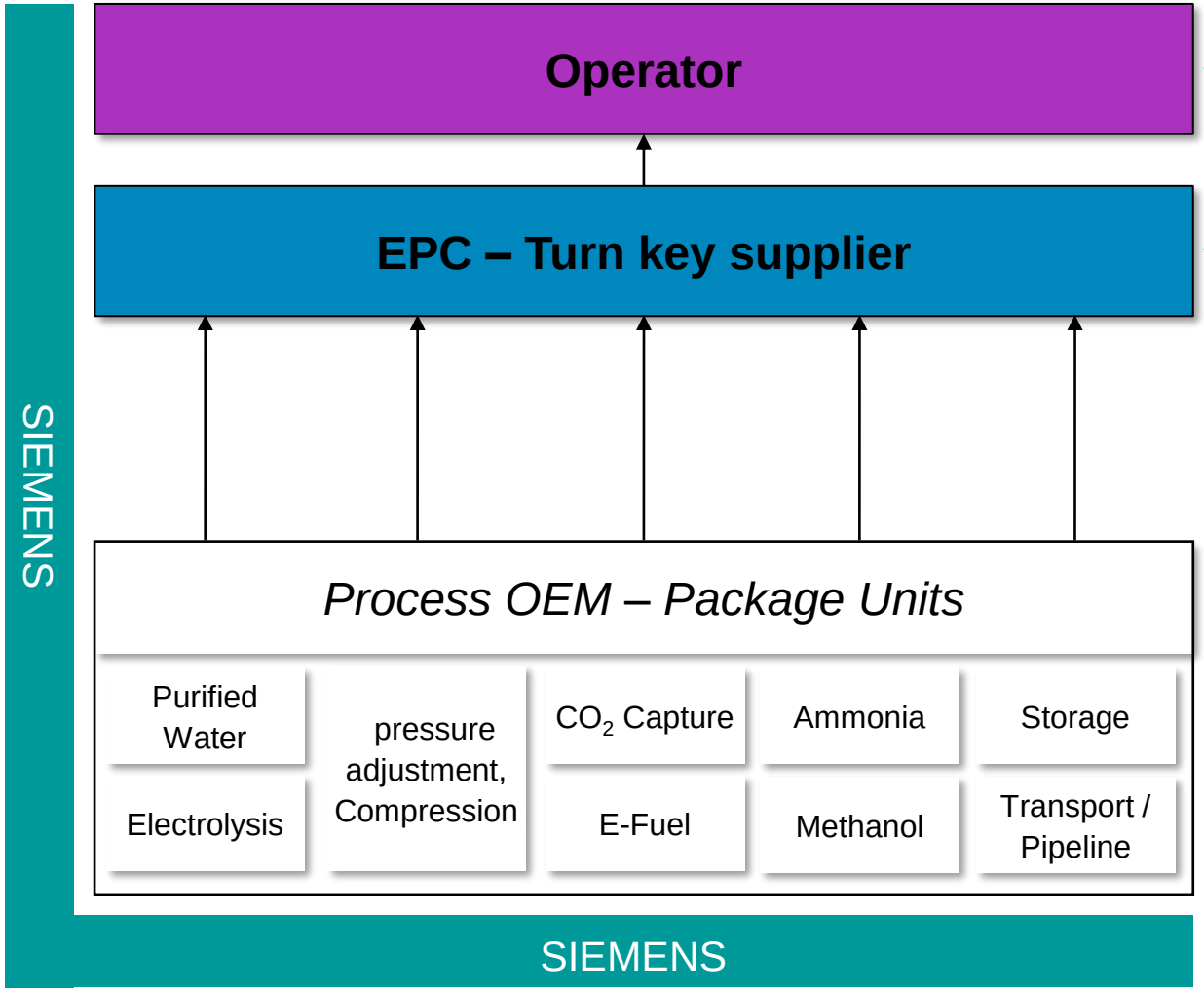
Siemens portfolio for the hydrogen economy in a typical P2X project setup



- Electrification: medium and low voltage technology
- Higher-level automation (DCS or SCADA)
- Industrial Cybersecurity (fullfilling the IEC 62443-3-3)
- Commissioning / Operator Training Systems
- Digitalization solutions in maintenance and operation (Digital Worker, Digital Logistics)

- Simulation SW
- Engineering SW and Engineering Support
- Commissioning / Operator Training Systems
- Automation (DCS or SCADA)
- Gas Analysis (H_2, O_2)
- Transmitters / sensors (pressure, temperature, flow)
- Rectifiers for electrolysis
- Drives for hydrogen compression
- Remote maintenance, tele control

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Different phases of a Hydrogen project with different financing options available (illustrative for Project Financing case)

	Phase 0: Project initiation	Phase 1: Project development & negotiation	Phase 2: Construction	Phase 3: Operations
Project phase	• Establishment of overall strategic vision • Market analysis, business planning, initial due diligence, feasibility studies • Project roadshow to onboard investors	• Formation of SPV or development agreement • Project contracts (EPC, input, permitting, off-take,…) • Financing contracts (SFS part of financing team)	• Execution of EPC and other supply contracts	• Execution of Operations & Maintenance • Upgrades / Refurbishment
Key milestone	**Project roadmap**	**Financial Close**	**Commercial Operations Date (COD)**	**Ongoing operations**
Financing demand	• Consulting fees	• Start-up costs (legal fees, consulting, etc.) • Consulting / advisory fees (e.g. engineering, legal, finance)	• Project costs (EPC, land, financing, etc.) • Pro rata funding	• Potential expansion • Potential re-financing
Financing offering	**None**	**Development funding & SFS Finance Advisory**	**Equity** **Debt**	**Equity** **Debt**
Financing provider	**Entrepreneur**	**External parties (Early stage/Developer funding)**	**SFS Equity/Debt** + External parties**	**SFS Equity/Debt** + External parties**

*Note: Illustrative view – Financing offering can generally also be provided in different phases than presented above based on individual project circumstances

**Note: In a single project Equity OR Debt can be provided by SFS

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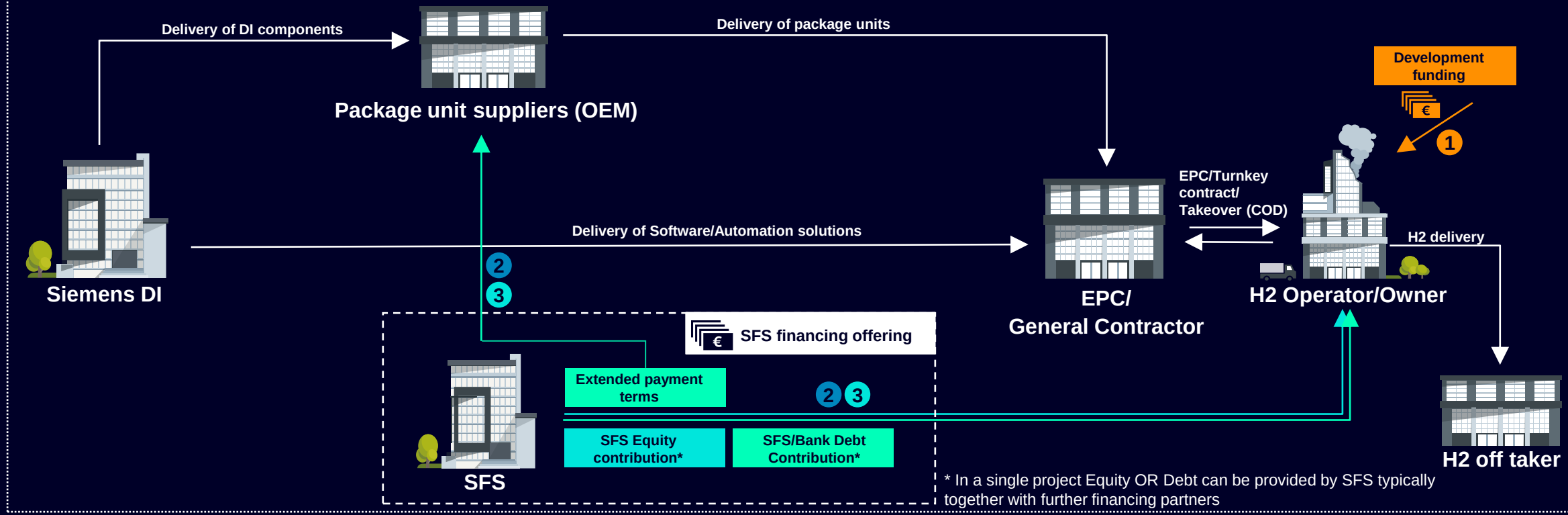
Target Scenario with financing along entire lifecycle of H2 production (illustrative for Project Financing case)

Phases for Hydrogen value chain …

Phase 0: Project initiation	Phase 1: Project development & negotiation	Phase 2: Construction	Phase 3: Operations

… derive joint product offering of DI & SFS



* In a single project Equity OR Debt can be provided by SFS typically together with further financing partners

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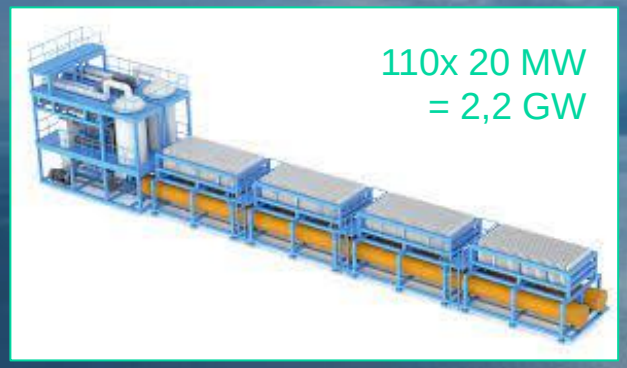
Use Case Helios Green Fuels in Neom, Saudi Arabia
First Giga-Project



The Project : Green Ammonia production in future planned city Neom (Saudi Arabia)

- 2,2 GW Hydrogen production by ThyssenKrupp with PCS 7, OXYMAT and CALOMAT (50)
- Air separation plant by Air Products

Success Factors

- Relationship with ThyssenKrupp
- Frame Agreement for DCS, Analytics, Networks & Security

Highlights

- Standard design for future TKIS projects globally

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