

DREES &
SOMMER

BUILDING THE BACKBONE OF CIRCULAR BATTERIES

Real World Insights from Industrial Facility
Development in Battery Environment

DREES & SOMMER? WHO WE ARE!

Status May 2026



AS AN **INTEGRATOR**, DREES & SOMMER COMBINES COMPETENCIES AND EXPERTISE FROM PROCESS, PRODUCTION AND BUILDINGS WITH A DIGITAL AND SUSTAINABLE MINDSET

INDUSTRY EXPERIENCE

With more than 50 years of experience in the industrial sector, we know the multitude of project challenges and processes our customers in the battery industry.

PRACTICE-ORIENTED

Our experts are engineers, consultants and project managers from a wide range of disciplines with practical planning, construction and project management experience.

HOLISTIC and INTEGRAL

We consider the entire life cycle of a project and rely on the symbiosis of process, production and industrial building planning combined with a digital and sustainable mindset.

DIGITAL and INDEPENDENT

The requirements of the project determine the selection of digital tools. Our consulting services focus on processes and interfaces.

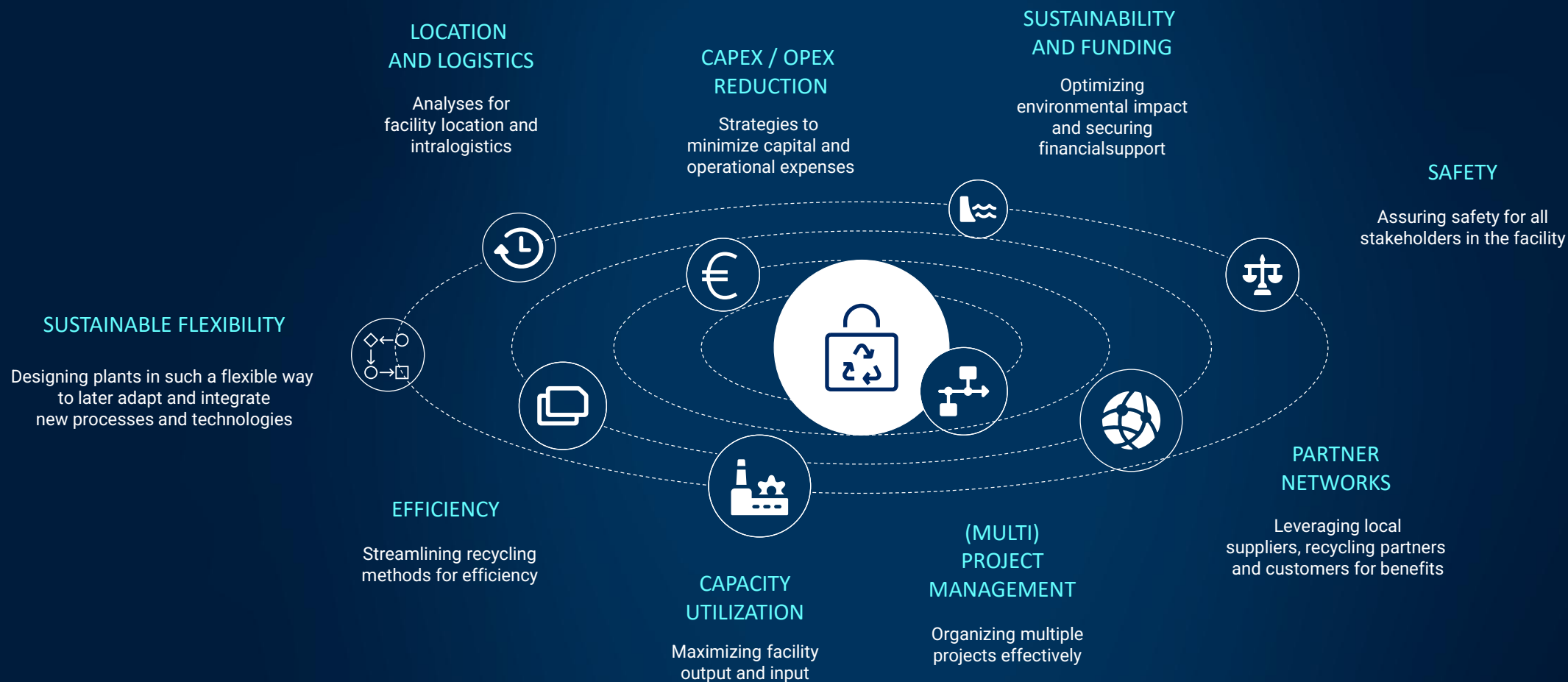
THE URGENT NEED TO MOVE BEYOND LINEAR THINKING

*“The linear economy
has to be replaced by a circular one.”*

Frans Timmermans,
European Commission

CHALLENGES AND QUESTIONS OUR BATTERY RECYCLING CUSTOMERS ARE FACING...

And how we specifically tackle them...



BATTERY RECYCLING AND BATTERY MANUFACTURING ARE VERY DIFFERENT BUT FACE SIMILAR CHALLENGES FOR PROJECTS AND INDUSTRIAL FACILITY DEVELOPMENT

HIGH CAPEX AND FRONT LOADED DECISIONS	EVOLVING TECHNOLOGIES AND NEW EMERGING PROCESSES	MARKET UNCERTAINTY (FEED STOCK, CUSTOMER OFF TAKE...)	MODULAR LAYOUT
REGULATORY REQUIREMENTS (HIGH SAFETY REQUIREMENTS, ENVIRONMENT, PERMIT)	LONG UTILITY AND EQUIPMENT LEAD TIMES	UTILITIES AND INFRASTRUCTURE UNDERESTIMATION	COMPLEX STAKEHOLDER MANAGEMENT



Core purpose and business case

Locations

Infrastructure and utilities

Operations

Material input/Feedstock and logistic flows

Safety demands

Regulations

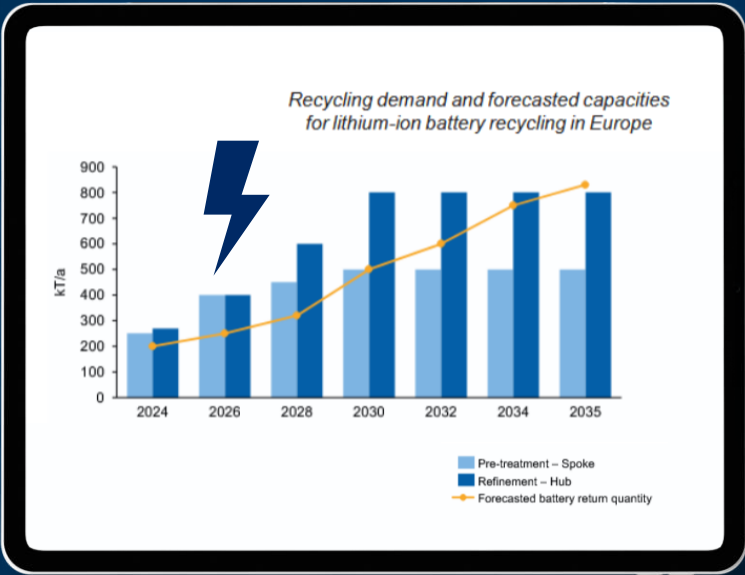
OVERVIEW OF GLOBAL PRODUCTION CAPACITIES

Overview of supply and demand in a market



STARTING WITH
FACILITY PLANNING

Short – mid term



CAPTURING
MARKET SHARES

Future

EVEN WITH HIGH MARKET AND DEMAND UNCERTAINTY NOW –
THE MARKET WILL COME AND FACILITIES WILL NEED TO BE BUILT AND OPERATING

BATTERY FACILITY ECOSYSTEM – WHO NEEDS TO BE ALIGNED

The management of their interdependencies, not their individual performance, determine project outcomes

Investors

Contractors

Technology and Equipment Provider

Regulatory and Public Authorities

Logistics and Material Handlers

Energy and Grid operators

Waste and Water Operators

Site/ Chemical Park operators



A BIG RISK IN BATTERY FACILITY PROJECTS IS MISALIGNMENT OF PROCESS, PLANNING AND PERMITTING

WHERE PROJECTS FAIL

Late involvement of permitting authorities



HOW TO MITIGATE

Early informal pre-consultation – before formal submission

Underestimated process safety requirements (ATEX, fire, explosion)



Integrated safety concept from concept phase, not retrofitted

Technology decisions made without understanding layout impact



Process–building co-design: tech freeze and facility design in parallel

Misalignment between EPC and process technology suppliers



Clear interface definitions and shared responsibility matrix from day one

Equipment and machinery supply often from China

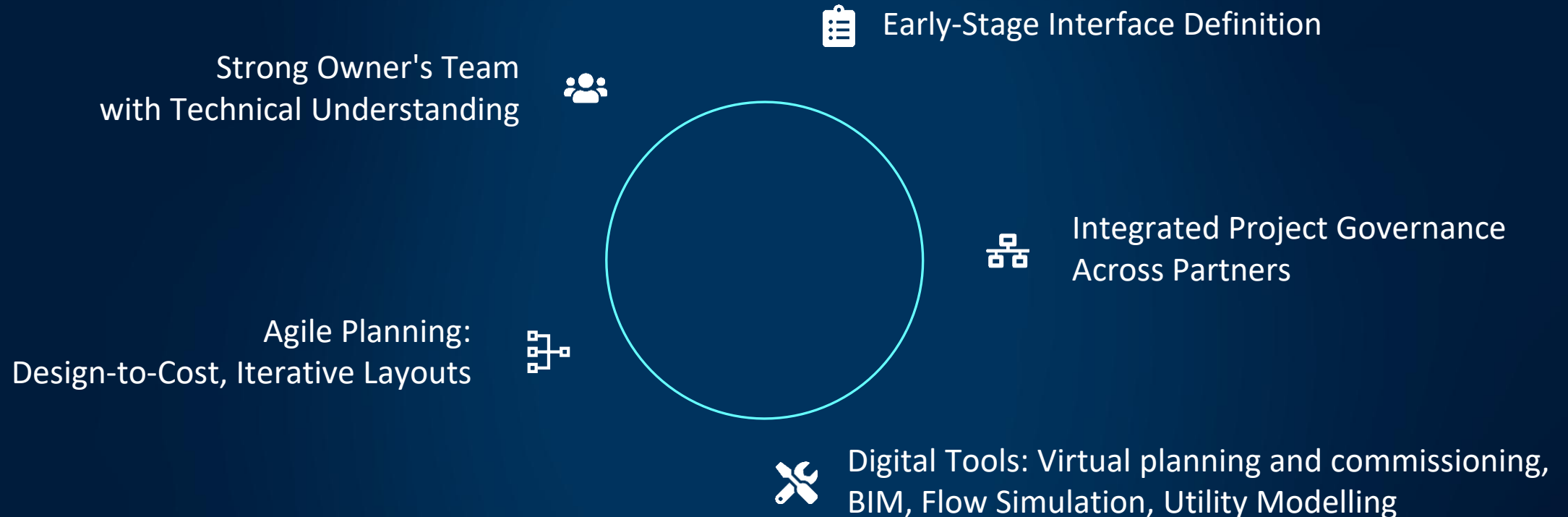


Implementing requirements from design phase onwards: Very early considerations in planning and permitting

RECOMMENDED

Phased development approach —
Design-to-cost, iterative layouts, modular building envelopes allow flexibility while permitting proceeds

HOW TO SUCCESSFULLY ALIGN ALL PLAYERS



FRONT LOADED DECISIONS MADE BY EARLY INTEGRATED TEAMS DEFINE THE MAJORITY OF FINAL COSTS AND SCHEDULED OUTCOMES

KEY TAKE AWAYS FROM BATTERY RELATED INDUSTRIAL PROJECTS

How to manage facility projects and ramp ups during market and technology uncertainty



Integrated Project Team from Day One



Front-Loaded Decision Making



EPC Involvement Before Tender Award



Early and constant
Authority Relationship Management



Technology Readiness Assessment



Commissioning as a Separate Workstream

CONTACT DETAILS



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