

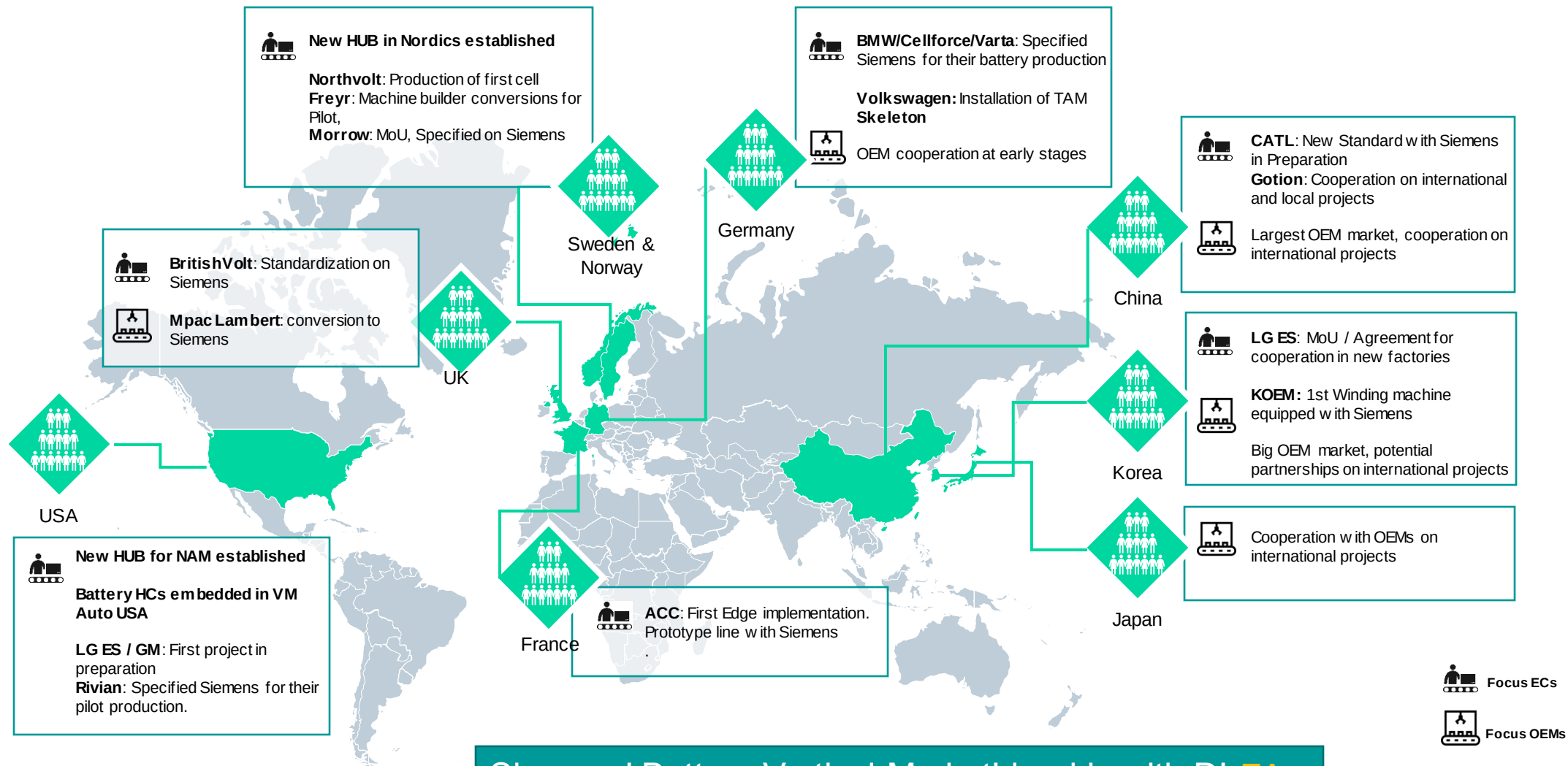
Gigafactories

Stefan Morgenstern

DI FA Vertical Management USA & CAN



Battery VM: Global set-up and focus accounts and tasks in work

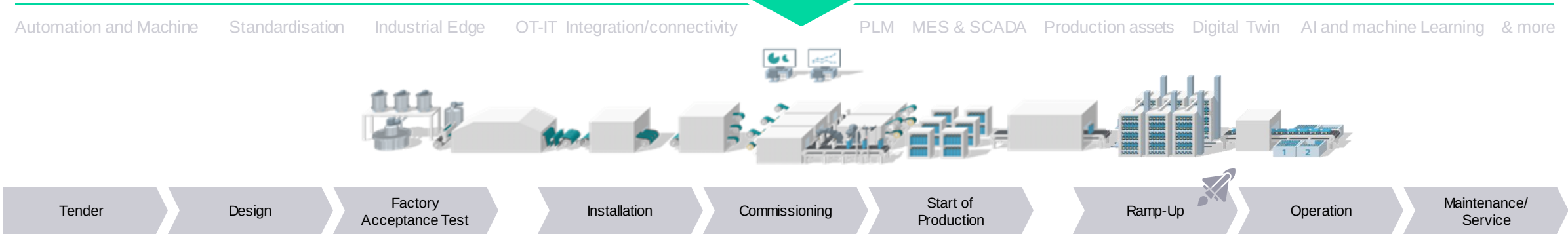


Siemens' Battery Vertical Market' lead is with DI FA

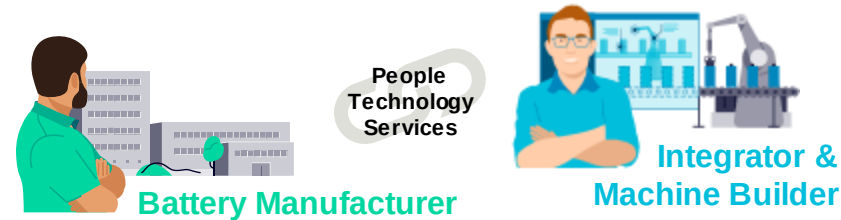
Siemens has a unique portfolio of products, concepts and services for battery manufacturing ... and has already the best references



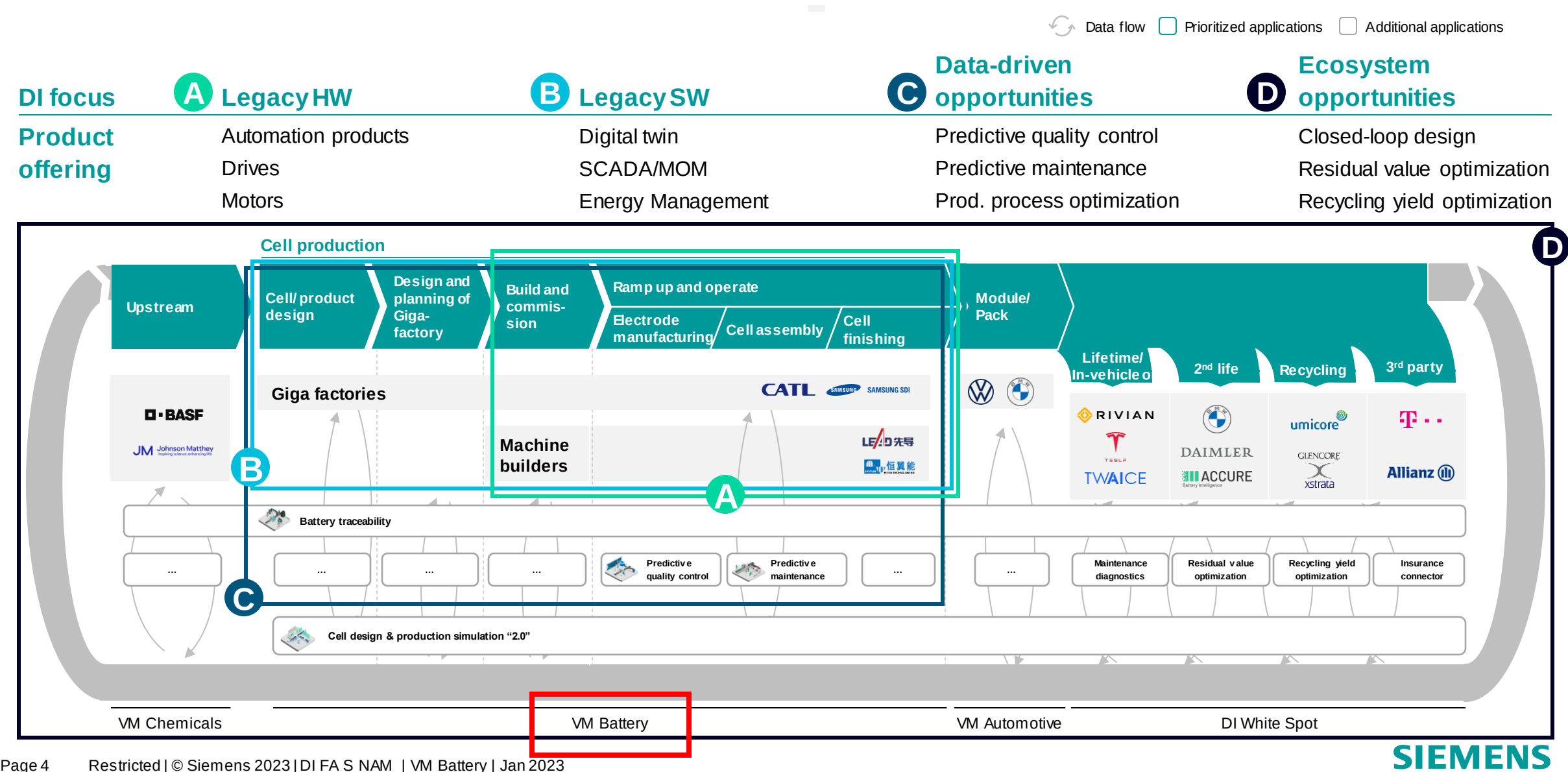
Innovative solutions across the entire value chain & lifecycle are required to meet the challenges & demands of the battery industry



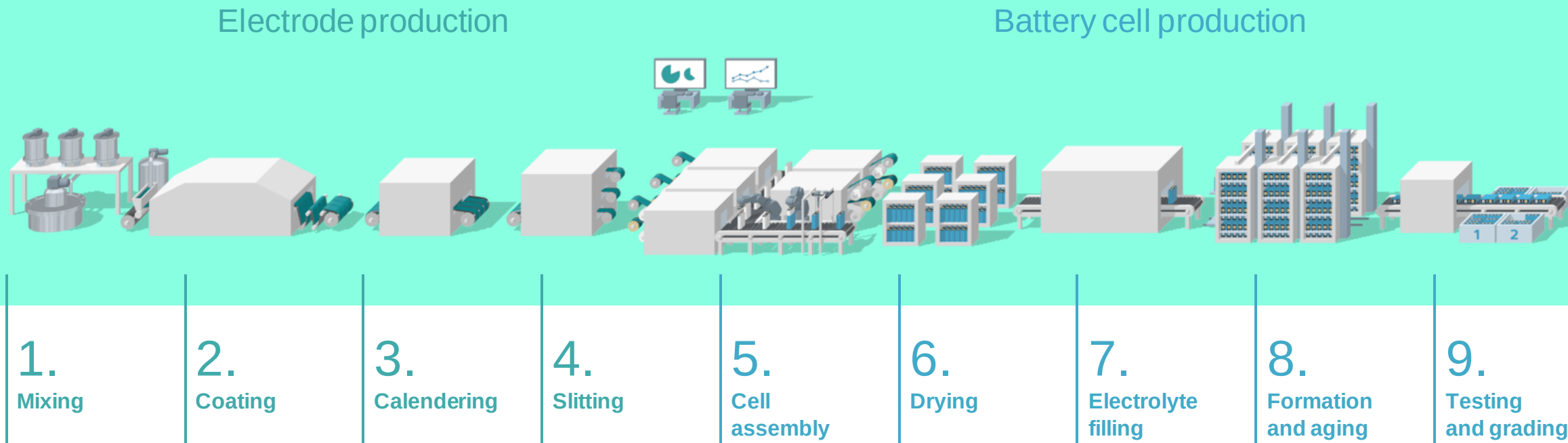
At **Siemens**, we support our partners globally across all project phases with



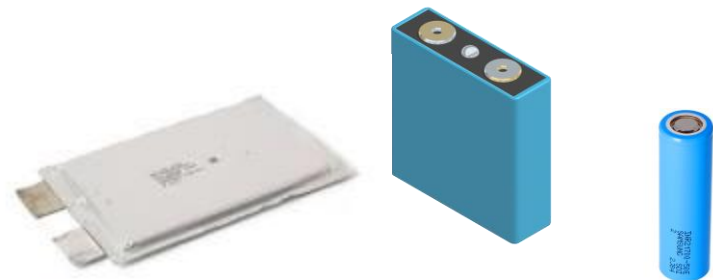
Battery business: DI Scope and Focus



Lithium-ion battery cell production process



Cell manufacturing principle doesn't vary much for different form factors or chemistries



Competitiveness - plenty of challenges have to be solved

Siemens supports the battery industry in the whole value chain



Raw Material
Advancement



Electrode
Production



BatteryCELL
Production



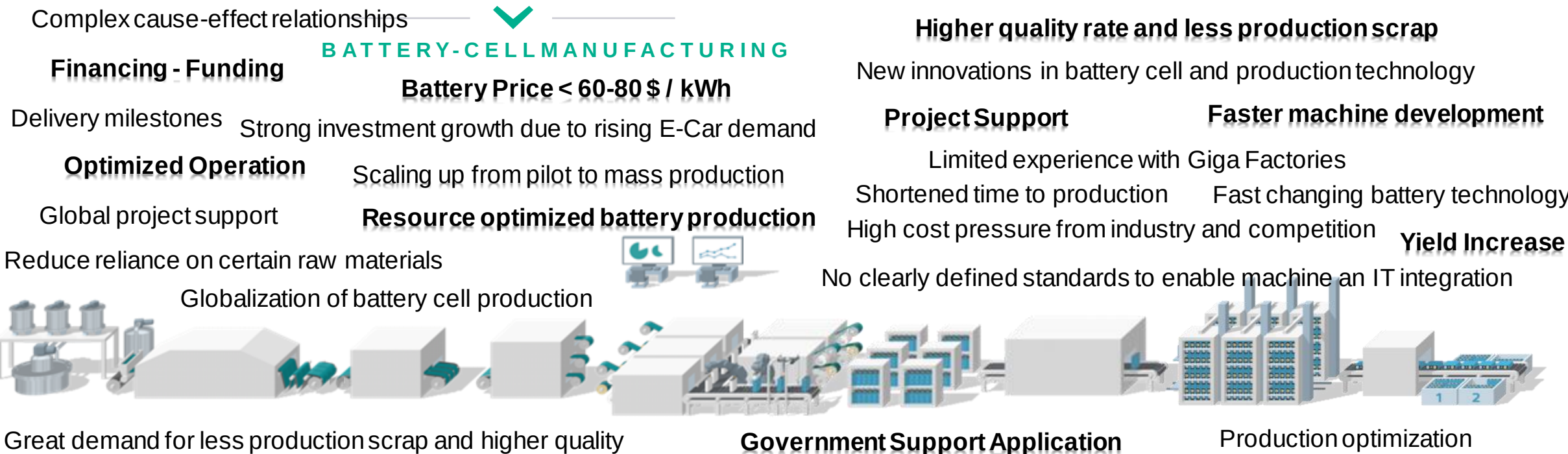
BatteryMODULE
Production



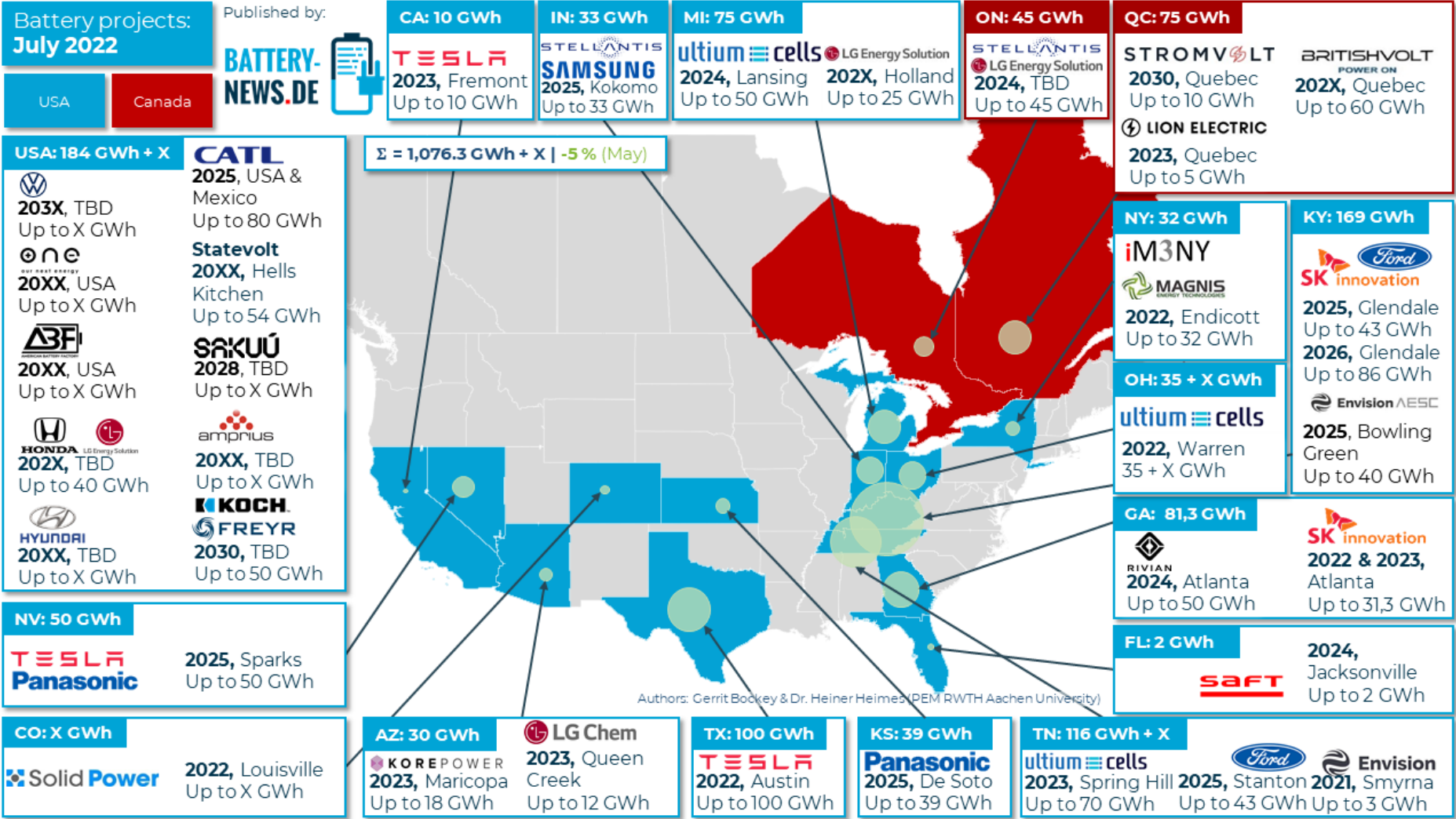
BatteryPACK
Production



Battery
Recycling

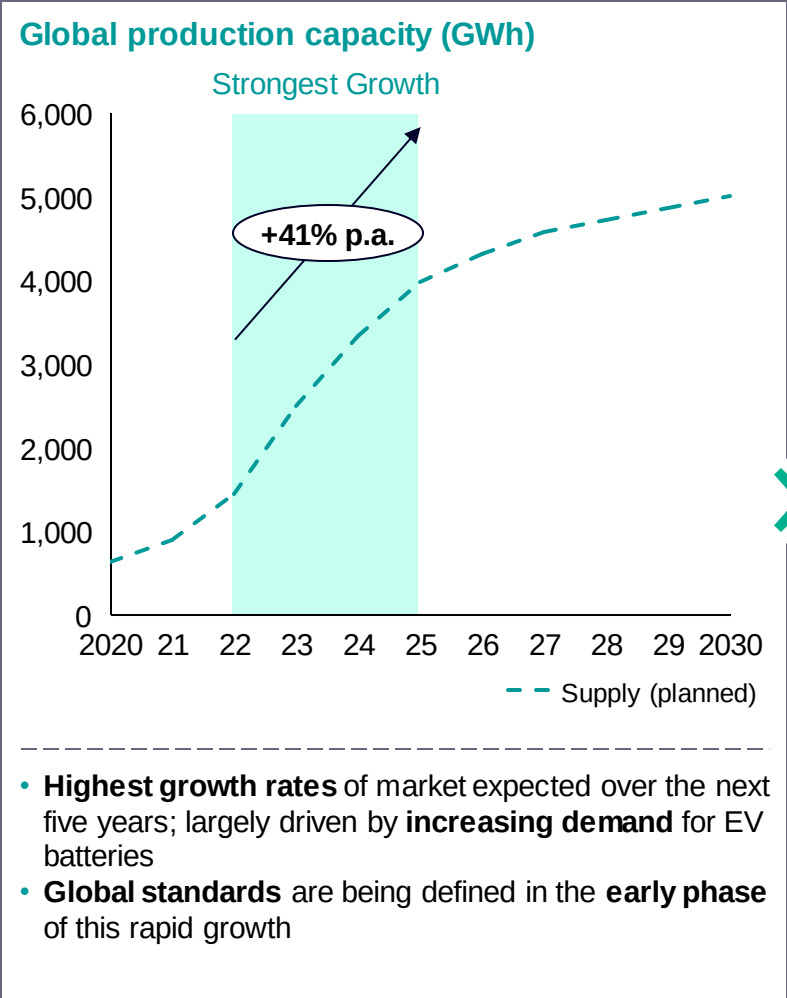


US (& CA) experiencing strong boost 2023+ due to measures such as Inflation Reduction Act → Invest ~\$3 Billion



Rapidly growing battery cell manufacturing industry

Global Ecosystem



Selected Focus End-Customers

		GWh	Factory locations
Incumbents	LG	+300	
	CATL	+700	
	BYD	+400	
Auto OEMs		+220	
	TESLA	+225	
	RIVIAN	+100	
JVs	SK	+245	
	ultium	+120	
Start-ups	northvolt	+180	
	FREYR	+120	
	FORGE NANO		
Research	KOREPOWER		
	Fraunhofer IFF	+1	

- Rapid emergence of **new players** in the battery industry
- **Incumbents**, and invest in **APAC** remain strong
- **EU** experienced strong boost, especially 2019-2023
- **US (& CA)** experiencing strong boost 2023+ due to measures such as Inflation Reduction Act



Early and close relationship to 1st customer base helps continuously development of battery solutions & optimal project support



Initiative Sales Lead

Generated by Events, Fairs or direct Approach by customer



Contact Customer

Compile „Battery Inquiry“
Contact VM Battery for Evaluation



Sales Pitch

Presentation of Siemens Battery Offering → Requests of Customer



Commitment

Identify and get clear commitment of BU & RC Project Members



Partnership

Sign non disclosure agreement (NDA) with customer



Exploration Workshop

Deep dive of projects challenges and Siemens solutions



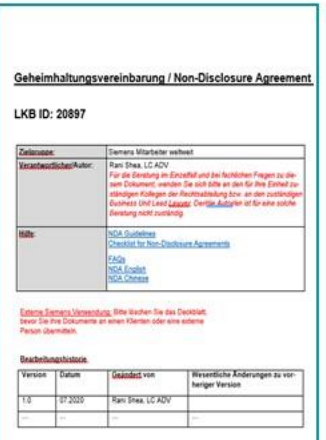
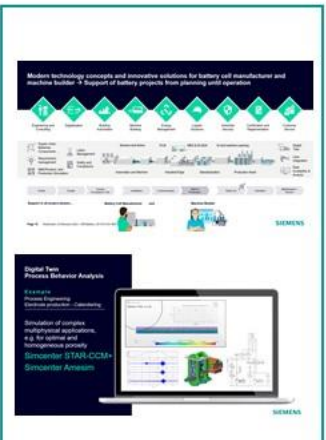
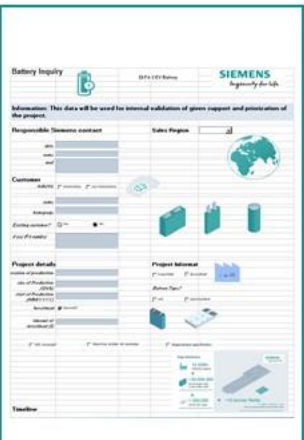
Sign MoU

Get final confirmation for Siemens Portfolio



Project Execution

Administrate project progress and interact with customer



Common Approach with Solution Map, Campaigns

“Early engagement” contact persons in USA

Tattersall, Andrew (RC-US SI S&OP VM) andrew.tattersall@siemens.com SI - earliest engagement Buildings

Phillips, Sam (RC-US DI CS DEDS) sam.phillips@siemens.com DI CS, Project development, early engagement

My contact

Stefan Morgenstern
DI FA Vertical Business Development USA & Canada
DI FA S NAM VM

Siemens Canada Ltd.
Oakville, ON

Mobile +1 365 996 1839
E-mail stefan.morgenstern@siemens.com