

**Project List: (Knut Zinnäcker)**

type	technology / technique	industry	project tasks - full responsibility for timing, engineering, technology, budget, schedule, results	where ?	invest [Mio €]
technically	rotogravure printing incl. peripheral equipment	decor-paper rotogravure printing	- process air handling / convective drying efficiency improved improvement convection drying at existing rotogravure printing plant	USA / MA	0,15
technical	rewinder	decor paper rotogravure printing	- new specific rewinding machine adapted development-budgeting-conception-..coordination-implementation-commissioning	USA / MA	0,6
strategically / technically	process data collection	decor paper print-, lacq-, treating	- print process data collection system for production + laboratory printing sectors development, training and implementation of specific production data acquisition & analysis system	Germany	/ time
strategically / technically	process data collection	decor paper rotogravure printing	- print process data collection system for production + laboratory printing sectors development, training and implementation of specific production data acquisition & analysis system	USA / MA	/ time
technically	lacquering plant incl. peripheral equipment	pre preg paper+ foils	- specific new lacquering line adapted => convective drying & self crosslinking system development-budgeting-conception-..coordination-implementation-commissioning	Germany	2,5
strategically / technically	compl. production facility impregnation & treating	decor paper treating/impregnation	-green field factory start up .. coordinative project mngmt. take over after 30% completion.. 10thsd sqm building size; completion factory construction; implementation 2 treating lines (85m) peripheral equipment, coordinative guide to contractors, suppliers craftsmen .. commissioning	USA / MA	> 15
technically	thermal oxidizer	lacquering facility emission	- regenerative thermal oxidizer for 45thsd Nm <sup>3</sup> /h development-budgeting-conception-..coordination-implementation-commissioning	Germany	1,3
strategically / technically	compl. production facility impregnation & treating	decor paper treating/impregnation	- factory/building modif., air-handling, process-lines, dosing/mixing, offices, thermal oil, cooling.. development-budgeting-conception-..coordination-implementation-commissioning	USA / NC	4,5
strategically / technically	compl. production facility foil/paper processing	printing-coating treating-embossing..	- factory relocation; official decommissioning, complex plant-&equipmentengineering 35thsd sqm; Reconstruction & renewal of 9 manufacturing plants; facility topographies, prototypg. e-beam, UV, nitrogen plant, treating, dosing, printing, embossing, winders, cooling, heating, drying...	Germany	7,5
technically	line/plant implementation impregnation & treating	decor paper treating/impregnation	- relocation and re-adaption.. of an revised and modernized treating line..85m roll to sheet .. incl. Mixing&dosing system, waste water treating plant expansion, air handling, factory prep. ..etc.	Germany	0,86
technically	factory air handling improvement	decor paper treating/impregnation	- process air handling improvement, make up air handling implementation heat exchangement, process air monitoring system, pressure-oriented factory supply..	Germany	0,35
technically	underwater evaporator nitrogen decompression	lacquering facility e-beam + UV techn.	- Conversion of a nitrogen evaporator plant to an underwater evaporator (fog-free) government requirement	Germany	0,14
technically	waste paper baler	decor paper printing	- new specific semi automatic waste paper baler (F=72to) adapted development-budgeting-conception-..coordination-implementation-commissioning	Germany	0,22
strategically / technically	rotogravure printing	decor-paper rotogravure printing	- modification of existing print line to an ability for a use of 2100mm cylinder circumference modification of ..impression roller system, plc, transport systems...etc.	Germany	[0,2]
strategically	SAP - PM-modul	maintenances/eng. dep. all sectors print-lacq.-treatg.	- developement, prototyping, test phases, adaption... until GO LIVE for maintence sectors 24/7 transp. for stuff capacity -material&labour costs - damage&repair analysis - expenditures..	Germany	/

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technically	cylinder galvanization rotogravure printing	decor paper printing	- renewal of exhaust ventilation system within existing electroplating department Wet washers, filtering, stacks, piping, fans ...regulatory requirements etc.	Germany	0,08
technically	embossing machine	printing&embossing cyl. manufacturing	- new and specific embossing machine for the development of new embossing structures development-budgeting-conception-..coordination-implementation-commissioning	Germany	0,18
technically	inline measurement equip. impregnation & treating	decor paper treating/impregnation	- new specific inline paper sheet measurement system adapted expert reports-conception-testing-qualifying...coordination-implementation-commissioning	Germany	0,22
strategically /technically	building & factory modifications & repairs	administration areas & work areas	- Conversion of various areas within manufacturing and administrative buildings and sectors structural engineering, lighting systems, energy, fire protection, safety, regulatory requirements ...	Germany/USA	> 3
technically	impregnation & treating incl. building + peripheral equipment	decor paper treating/impregnation	- new specific manufacturing plant, 10ft paper width, >90m line length.. incl. peripheral needs.. coordination-prototyping-conception-testing-qualifying...building prep.-implement.-commissng. (patented)	USA / MA	6,5
strategically /technically	special applications on plastic foils incl. building + peripheral equipment	PET; BOPP...etc lacquering, E-beam, UV, PAC; Excimer	- new specific manufacturing plant 7ft, new hybrid process chain development, ..functional effects, radiation curing steps ... strategical prepare, process chain development, budgeting, contractor coordination&design guidance-conception-implementation-commissioning	Italy	> 13
technically	new process emission exhaust systems incl. state funding program	production & assembling sectors Power Tool manufacturer	- integration planning, qualification, techn. projecting, implement. .. of an highly efficient process emission exhaust system exclusive on-site demand & techn. adaptation expertise ...system partner qualification...system selection .. implementation - commissioning	Germany	0,6
strategically /technically	hybrid lacquering on pre-preg paper incl. building + peripheral equipment	Pre-Preg, Decor-paper..and more konv.drying, E-beam, UV, Excimer	- 2 new specific manufact. plants, new hybrid process chain development, .. colored ind.furniture products, radiation processed exclusive on-site demand & techn. adaptation expertise ...system partner qualification..system selection .. implementation - commissioning	Poland & GER	> 13

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## Feasibility studies, startegic and budget simulations, expert reports

technology / technique	Feasibility studies, startegic and budget simulations, expert reports	where ?	sim. invest result [Mio €]
decor-paper / web shaped substrates	modernization & recommissioning of several process-lines, incl. building & peripheral equipm. investment needs	Europe/USA/east EU	0,4-2,5
decor-paper / rotogr. printing	several joint venture ideas ... with 2 printing presses (relocated) plus new building & peripheral equipment	Russia	4,5 - 11,0 (green field)
decor-paper / impregn.-treating	relocation and modernization of treating lines plus building expansion & peripheral equipment	USA	approx. 9,0
ink manufacturing	expansion of existing ink manuf. plant, building, processes, bead mills, ystral mixers,.. piping, processing	Germany	approx. 0,6
building and facility construction	several building expansions, (high) rack storage & office area expansions, roll logistic improvements..	Germany	0,2 - 13,0
decor paper / pre.preg. lacquering	several new prototyped E-beam/curing -process plants & lines, hybrid (print-treating-lacquering), "roll to roll"	Germany	5,0 - 7,0
web shaped materials	several individualized application and processing units to adapt to web oriented plants or machines	Germany / Poland	0,25 - 1,5
decor-paper / rotogr. printing	complex factory relocation (>30thsd sqm), all peripheral equipment, building construction, turn key projecting	Germany	approx. 30,0
decor paper	construction digital printing area within exist. Building incl. Process technology and peripheral equipment	Germany	approx. 3,5 (without digi-press)
web shaped substrates	several relocations & modernizations of manufacturing lines plus building expansion & peripheral equipment	Europe + USA	up to 10,00
start up manufacturing plant decor paper impregnation	locaton selection, location expertise and plant simulation, technical factory design/layout, budgeting	USA	up to 10,00
trouble shoot expertises, foil coating processes	close collaboration with machine/plant manufacturers and process owner	Germany / Poland	...
special applications-web shaped; non conventional	service supporting interface between machine builder and process owner /contractor for new & prototyped applications	international	...
inline process adaption for conv. Impregnation plant	downstream innovative inline finishing process (UV, EB screen..) within a standard decorative paper impregnation line	Germany	ca. 3 - 4
rigging company - start up support	methodical support, customer & subcontractor contacting, strategic on site action prepare	USA	...
..etc.			