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Greater Flexibility For Smarter Energy

Presented by **Arie van Boven**
Arco Stolk

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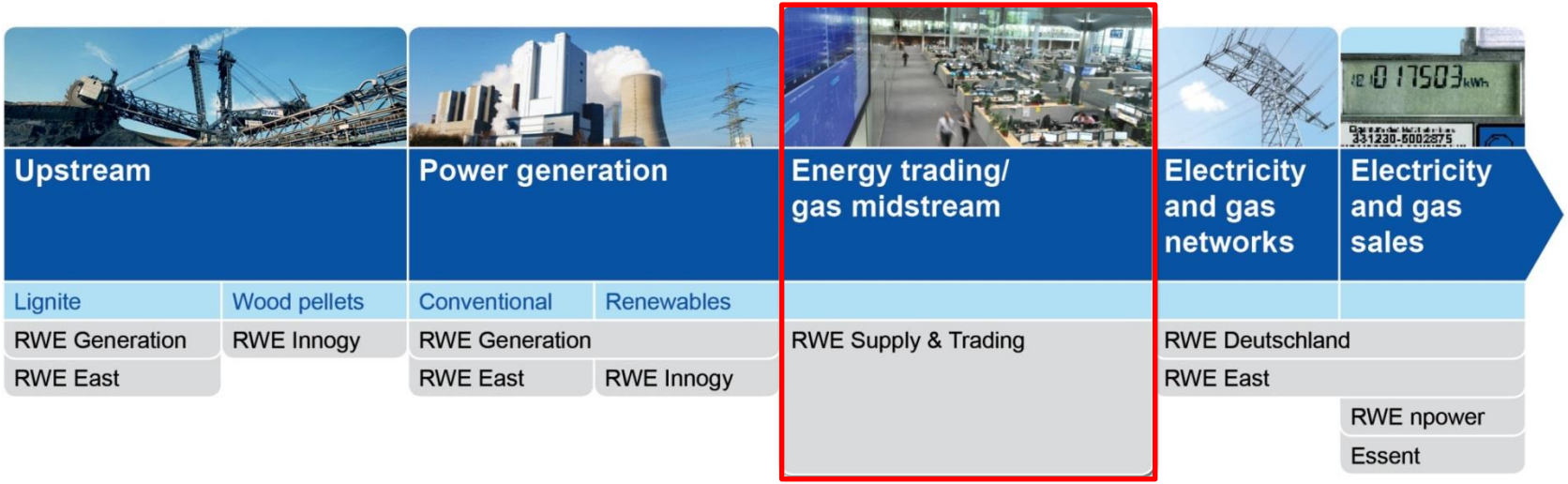
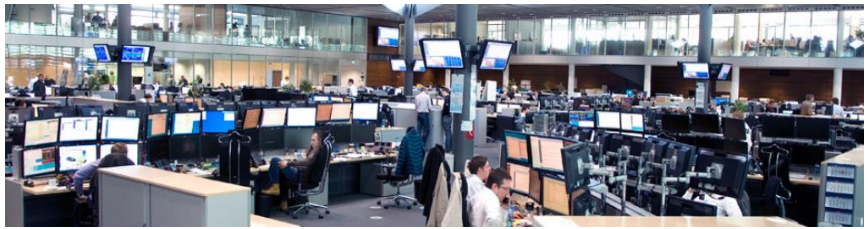
RWE Supply & Trading: The Commercial Center of RWE





- Our headquarters in Essen, Germany, Europe's largest energy trading floor
- A center of excellence in energy trading, with approximately 1,300 employees coming from over 37 countries

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Who Are We Working For?

Our main customer: **Load Dispatch**

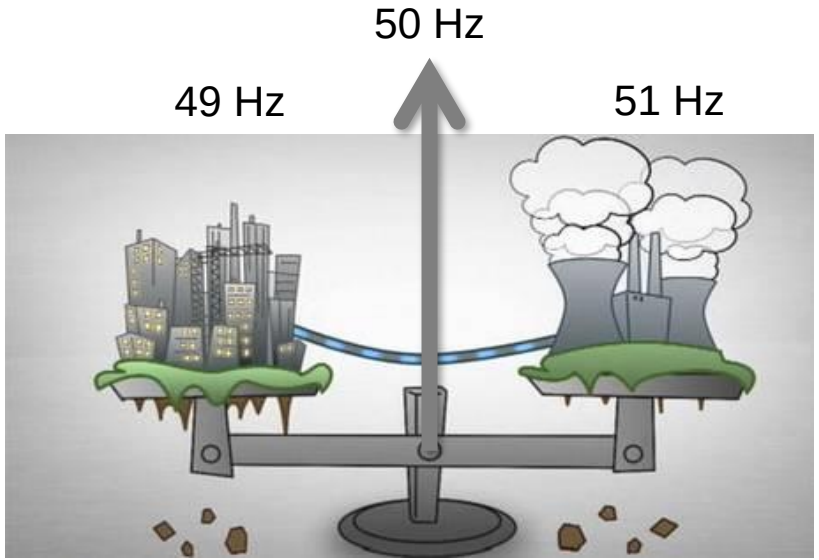
Short-term optimization and control of the use of RWE power plants, considering the technical and economical conditions

Gas Dispatch

Reporting/Billing systems

SCADA

Actually…. Everybody uses data from the PI System



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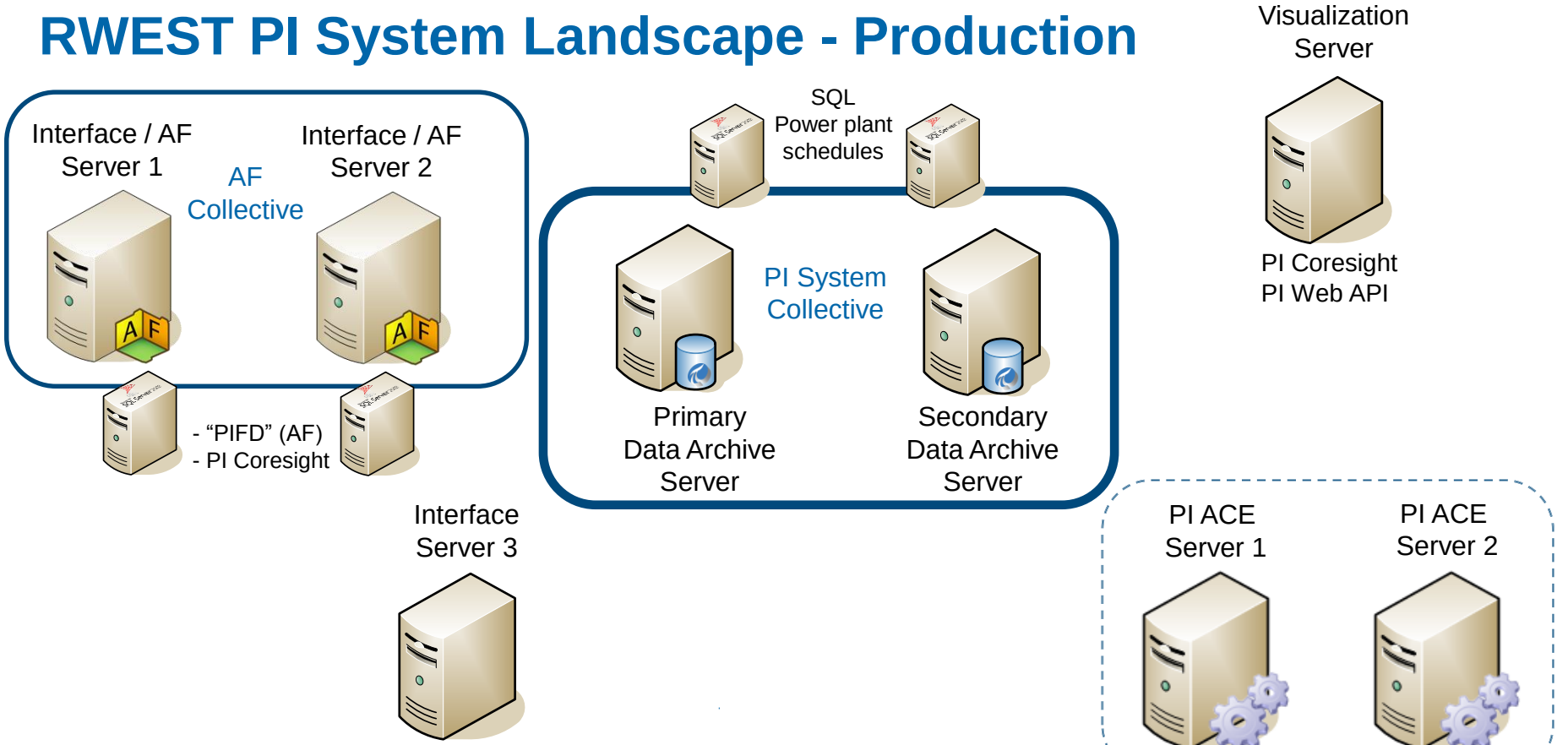
RWEST PI System Landscape - Production



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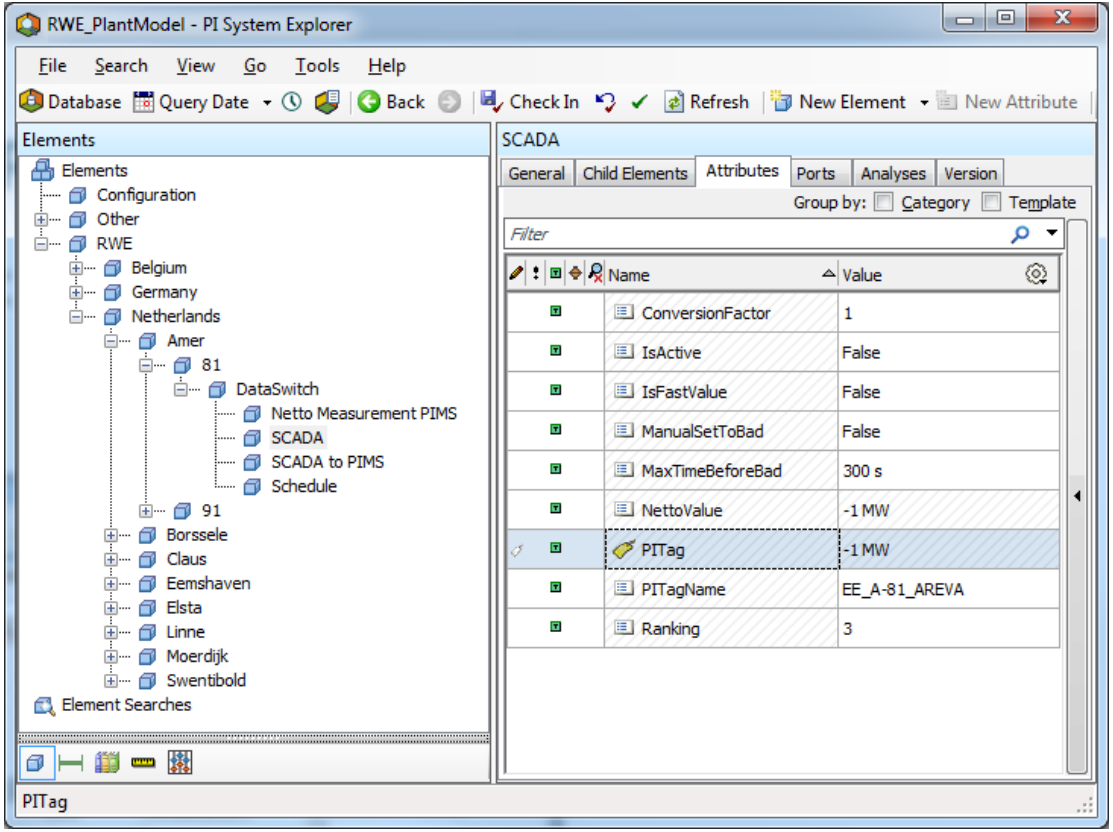
The RWE AF Plant Model

Summer 2015 : in-house workshop

Gained know-how to create RWE Plant Model

Create new applications using the RWE Plant Model (replaces old applications)



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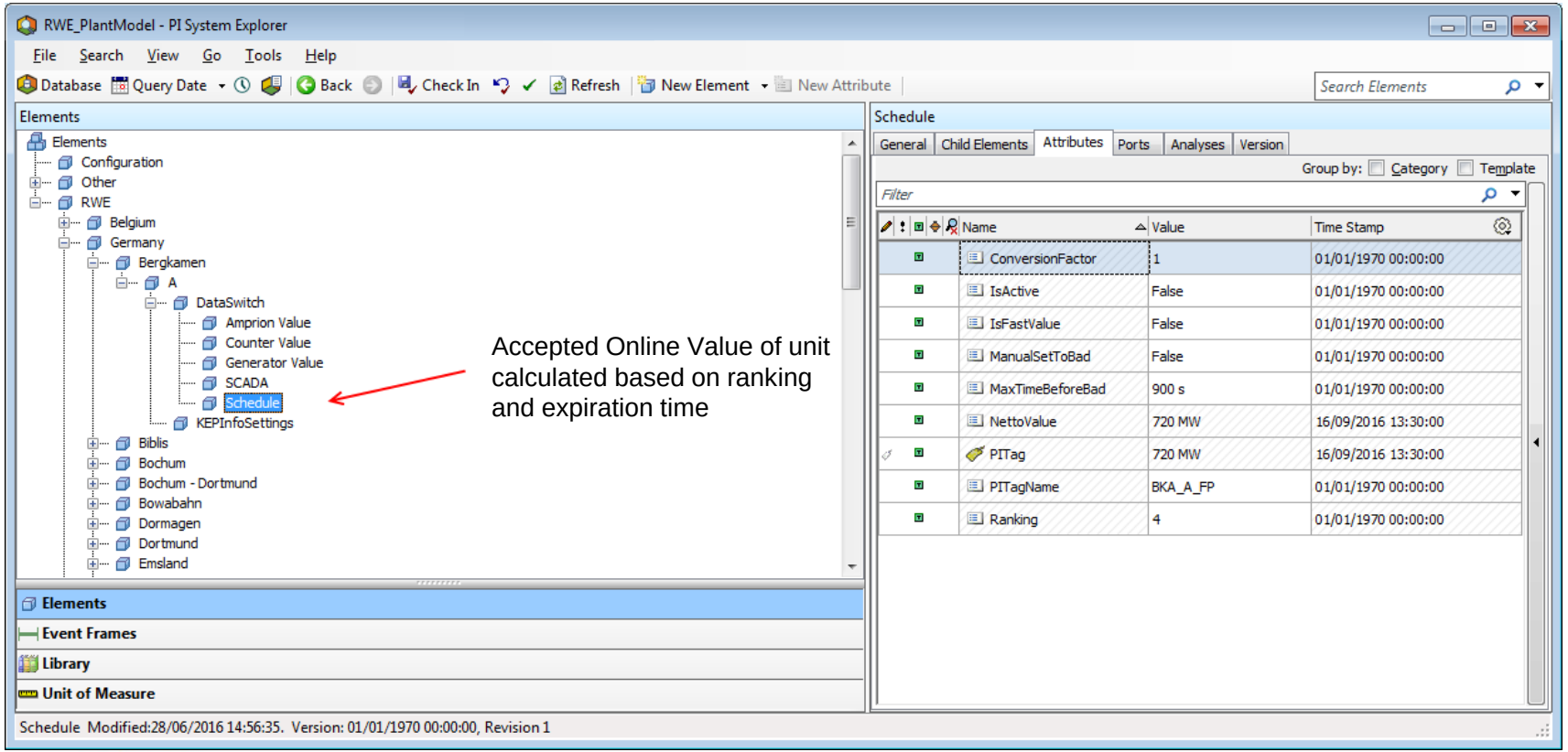
New Application : Dataswitch (1)



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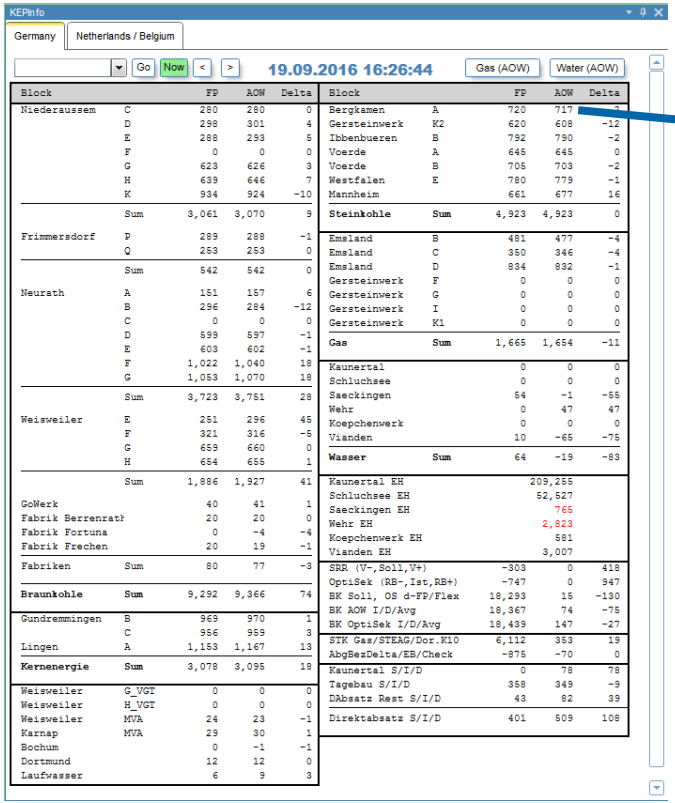
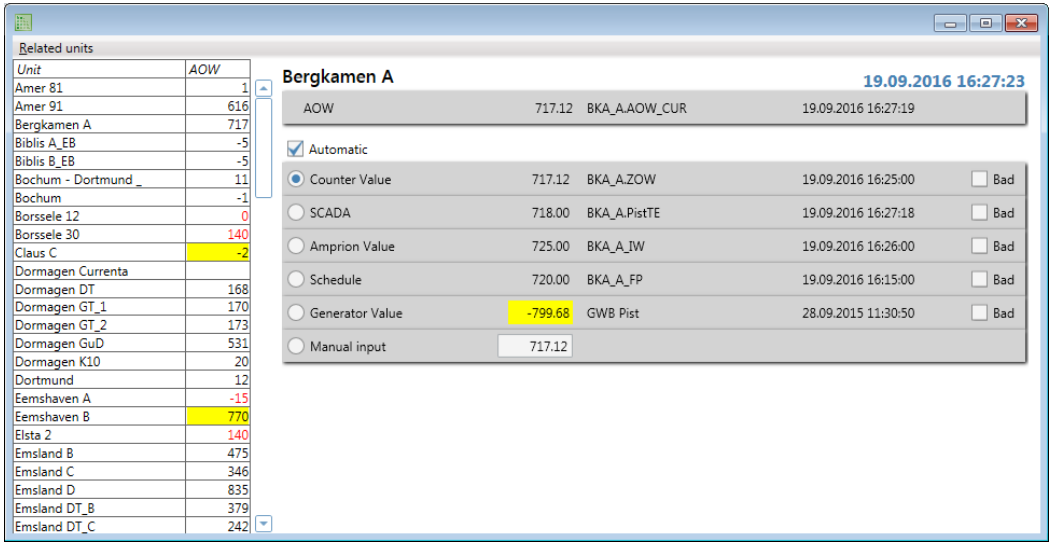
New Application : Dataswitch (2)



Block		FP	AOW	Delta
Niederaussem	C	280	280	0
	D	298	301	4
	E	288	293	5
	F	0	0	0
	G	623	626	3
	H	639	646	7
	K	934	924	-10
	Sum	3,061	3,070	9
Frimmersdorf	P	289	288	-1
	Q	253	253	0
	Sum	542	542	0
Neurath	A	151	157	6
	B	296	284	-12
	C	0	0	0
	D	599	597	-1
	E	603	602	-1
	F	1,022	1,040	18
	G	1,053	1,070	18
	Sum	3,723	3,751	28
Weisweiler	E	251	296	45
	F	321	316	-5
	G	659	660	0
	H	654	655	1
	Sum	1,886	1,927	41
GoWerk		40	41	1
Fabrik Berrenrath		20	20	0
Fabrik Fortuna		0	-4	-4
Fabrik Frechen		20	19	-1
Fabriken	Sum	80	77	-3
Braunkohle	**Sum**	9,292	9,366	74
Gundremmingen	B	969	970	1
	C	956	959	3
Lingen	A	1,153	1,167	13
Kernenergie	**Sum**	3,078	3,095	18
Weisweiler	G_VGT	0	0	0
Weisweiler	H_VGT	0	0	0
Weisweiler	MVA	24	23	-1
Karnap	MVA	29	30	1
Bochum		0	-1	-1
Dortmund		12	12	0
Laufwasser		6	9	3

Block		FP	AOW	Delta
Bergkamen	A	720	717	-3
Gersteinwerk	K2	620	608	-12
Ibbenbueren	B	792	790	-2
Voerde	A	645	645	0
Voerde	B	705	703	-2
Westfalen	E	780	779	-1
Mannheim		661	677	16
Steinkohle	**Sum**	4,923	4,923	0
Emsland	B	481	477	-4
Emsland	C	350	346	-4
Emsland	D	834	832	-1
Gersteinwerk	F	0	0	0
Gersteinwerk	G	0	0	0
Gersteinwerk	I	0	0	0
Gersteinwerk	K1	0	0	0
Gas	**Sum**	1,665	1,654	-11
Kaunertal		0	0	0
Schluchsee		0	0	0
Saeckingen		54	-1	-55
Wehr		0	47	47
Koepchenwerk		0	0	0
Vianden		10	-65	-75
Wasser	**Sum**	64	-19	-83
Kaunertal EH			209,255	
Schluchsee EH			52,527	
Saeckingen EH			765	
Wehr EH			2,823	
Koepchenwerk EH			581	
Vianden EH			3,007	
SRR (V-,Soll,V+)		-303	0	418
OptiSek (RB-,Ist,RB+)		-747	0	947
BK Soll, OS d-FP/Flex		18,293	15	-130
BK AOW I/D/Avg		18,367	74	-75
BK OptiSek I/D/Avg		18,439	147	-27
STK Gas/STEAG/Dor.K10		6,112	353	19
AbgBezDelta/EB/Check		-875	-70	0
Kaunertal S/I/D		0	78	78
Tagebau S/I/D		358	349	-9
DAbsatz Rest S/I/D		43	82	39
Direktabsatz S/I/D		401	509	108



Unit	AOW
Amer 81	1
Amer 91	616
Bergkamen A	717
Biblis A_EB	-5
Biblis B_EB	-5
Bochum - Dortmund _	11
Bochum	-1
Borssele 12	0
Borssele 30	140
Claus C	-2
Dormagen Currenta	
Dormagen DT	168
Dormagen GT_1	170
Dormagen GT_2	173
Dormagen GuD	531
Dormagen K10	20
Dortmund	12
Eemshaven A	-15
Eemshaven B	770
Elsta 2	140
Emsland B	475
Emsland C	346
Emsland D	835
Emsland DT_B	379
Emsland DT_C	242

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New Application : Dataswitch (3)

Uses RWE Plant Model

Uses AF SDK

Very flexible

GUI build with Windows Presentation Foundation (Microsoft)

Redundant

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Future Tags at RWEST

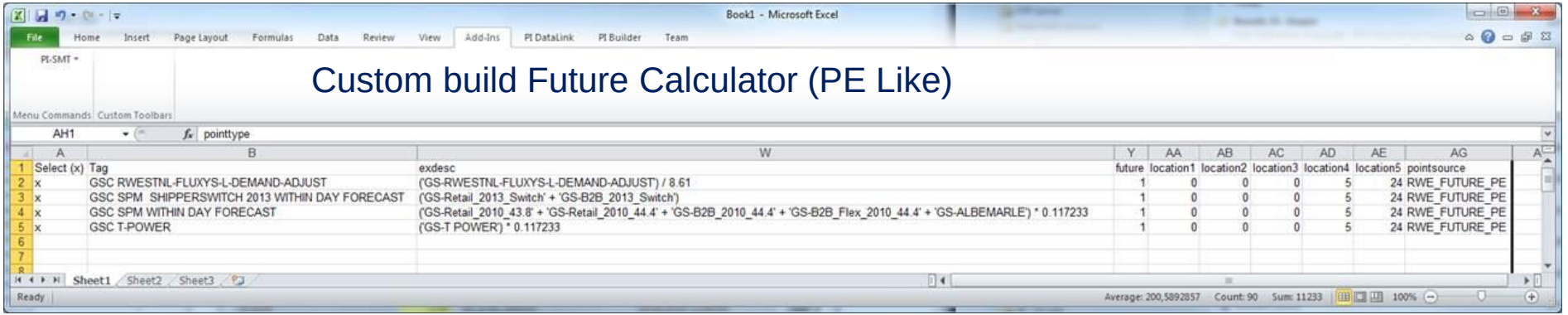
Schedules for power plants

Weather/wind forecast

Pricing prognosis etc.

Missing: calculation with future values

Free tip for OSIsoft:
add this functionality to analysis ☺

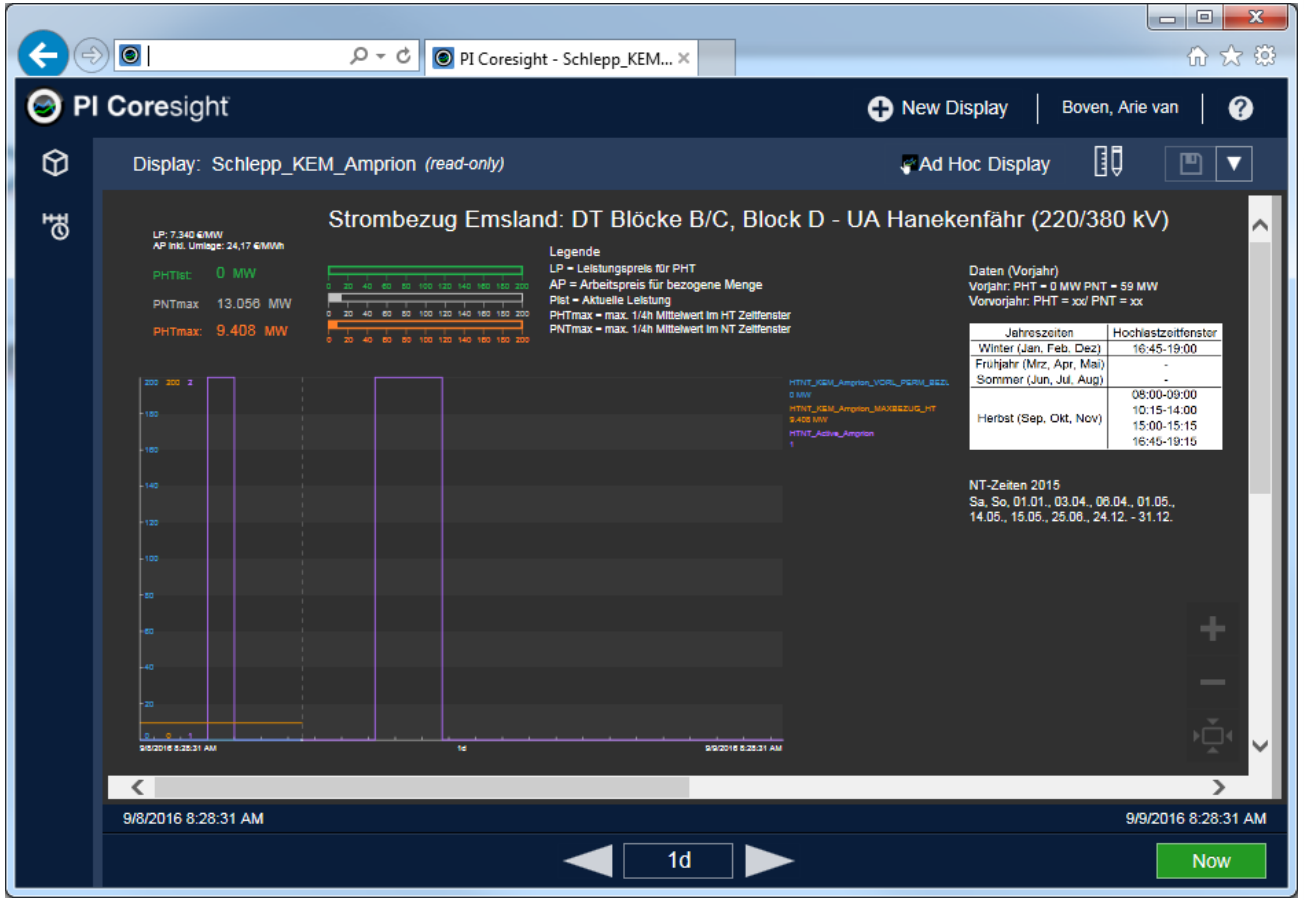


	A	B	W	Y	AA	AB	AC	AD	AE	AG
1	Select (x)	Tag	exdesc	future	location1	location2	location3	location4	location5	pointsource
2	x	GSC RWESTNL-FLUXYS-L-DEMAND-ADJUST	('GS-RWESTNL-FLUXYS-L-DEMAND-ADJUST') / 8.61	1	0	0	0	5	24	RWE_FUTURE_PE
3	x	GSC SPM SHIPPERSWITCH 2013 WITHIN DAY FORECAST	('GS-Retail_2013_Switch' + 'GS-B2B_2013_Switch')	1	0	0	0	5	24	RWE_FUTURE_PE
4	x	GSC SPM WITHIN DAY FORECAST	('GS-Retail_2010_43.8' + 'GS-Retail_2010_44.4' + 'GS-B2B_2010_44.4' + 'GS-B2B_Flex_2010_44.4' + 'GS-ALBEMARLE') * 0.117233	1	0	0	0	5	24	RWE_FUTURE_PE
5	x	GSC T-POWER	('GS-T POWER') * 0.117233	1	0	0	0	5	24	RWE_FUTURE_PE

PI Coresight 3 (1)

PI Coresight instead of PI ProcessBook

Uses future tags



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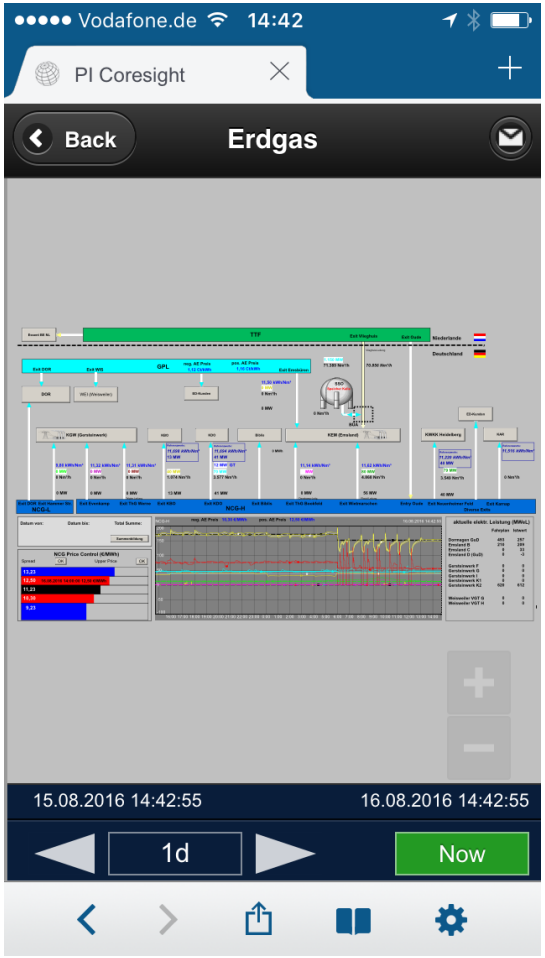
PI Coresight 3 (2)

PI Coresight on iPhone

Mobile Iron: https://www.mobileiron.com/

Enables intranet urls on mobile phones

Enables business to react 24/7 !



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New Application : PE Analyzer

Problem: Performance Equation gives “Calc Failed”….

Errors are highlighted

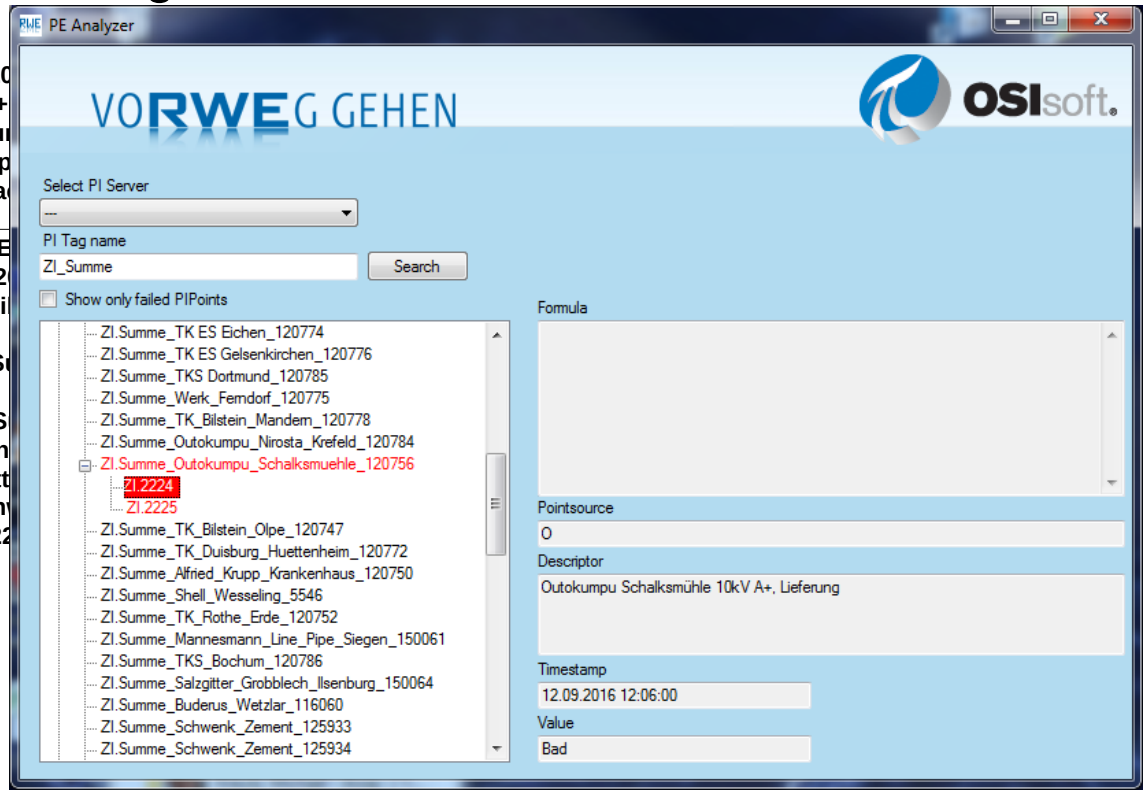
Finds bad values quickly

Finds tested calculations

Uses AF SDK

Easy to use

Saves investigation time and money



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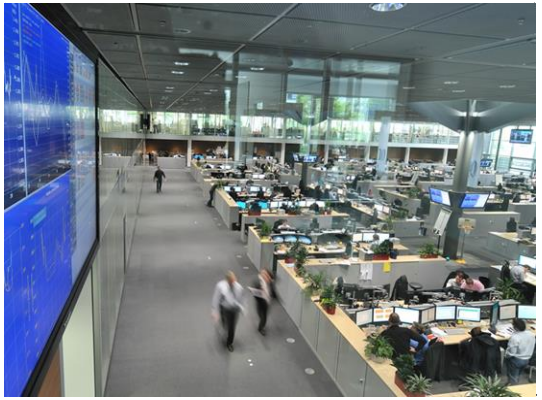
Extended Use of AF / AF SDK

COMPANY and GOAL

RWE Supply & Trading is the commercial center of RWE, and wanted to save time and money with their tools by means of AF and AF SDK



CHALLENGE

Old applications make use of different configurations, old PI API versions and are not redundant

- Multiple versions of the truth
- Old and different toolsets
- Difficult to make changes in old configuration

SOLUTION

In-house workshop gave us know-how and idea to create RWE plant model and use AF for new tools

- Using AF modeling and the AF SDK gives us the ability to create whatever we want
- “Our only limitation, is our imagination”

RESULTS

More flexibility and transparency, and the ability to react instant because of PI Coresight

- AF modeling gives flexibility and saves time
- PI Coresight gives 24/7 insight on iPhone
- Future tags replaces external databases

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Questions

Please wait for the **microphone** before asking your questions

State your **name & company**

Please remember to…

Complete the Online Survey for this session

http://ddut.ch/osisoft

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감사합니다

谢谢

Danke

Gracias

Merci

Thank you

ありがとう

Спасибо

Obrigado

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