Reducing Reserved Daily Natural Gas Capacity Through Operational Intelligence

Presented by Gábor MUCSINA

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Agenda

- Introduction
- Background
- Business Challenge
- Solution
- Technical Details
- Q&A

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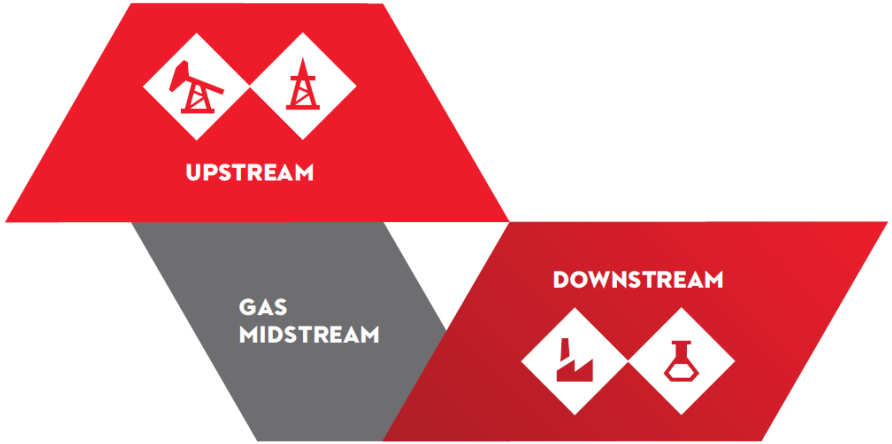
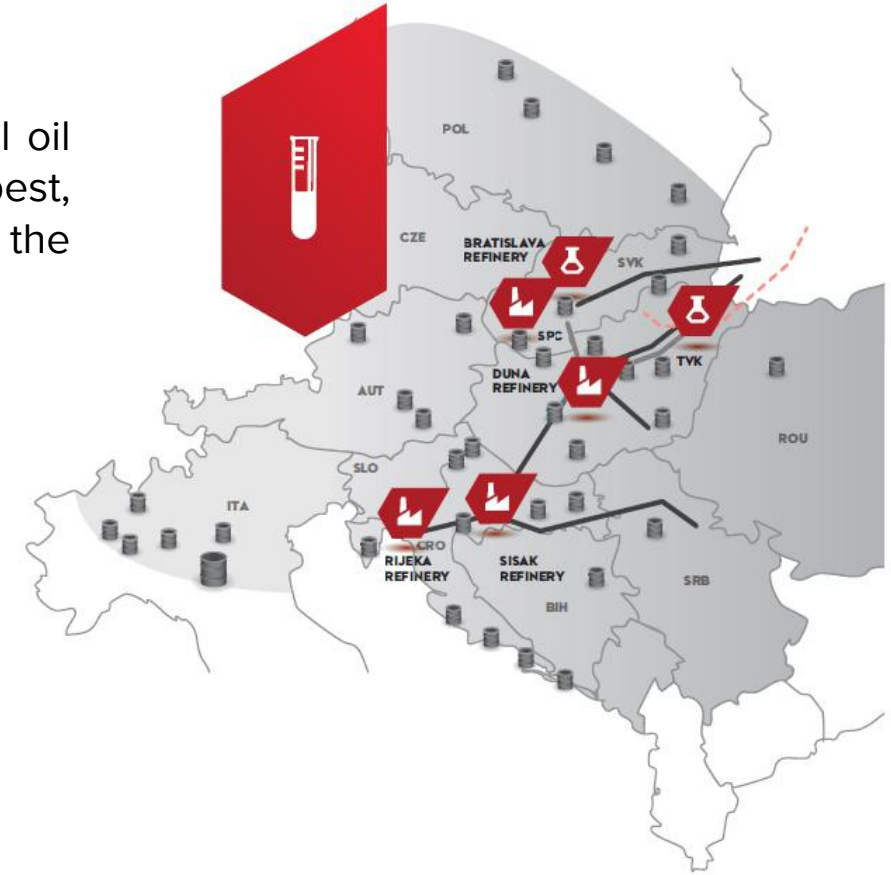
MOL Group

MOL is an integrated, independent, international oil and gas company, headquartered in Budapest, Hungary with a track record of over 100 years in the industry.

CORE ACTIVITIES





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MOL Group in numbers

OSIsoft and MOL Hungary

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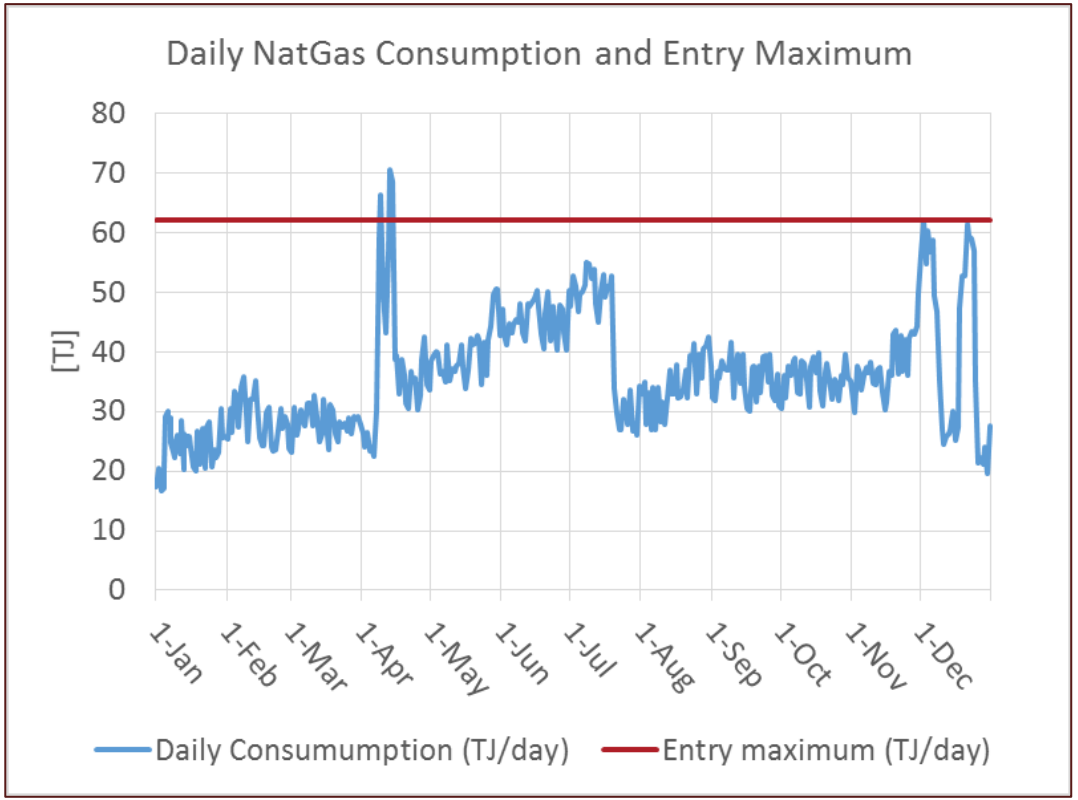
Background

- High natural gas consumption
- Reserved capacity has to be purchased (Entry maximum)
- Fluctuation in consumption
- Entry maximum has to be high enough



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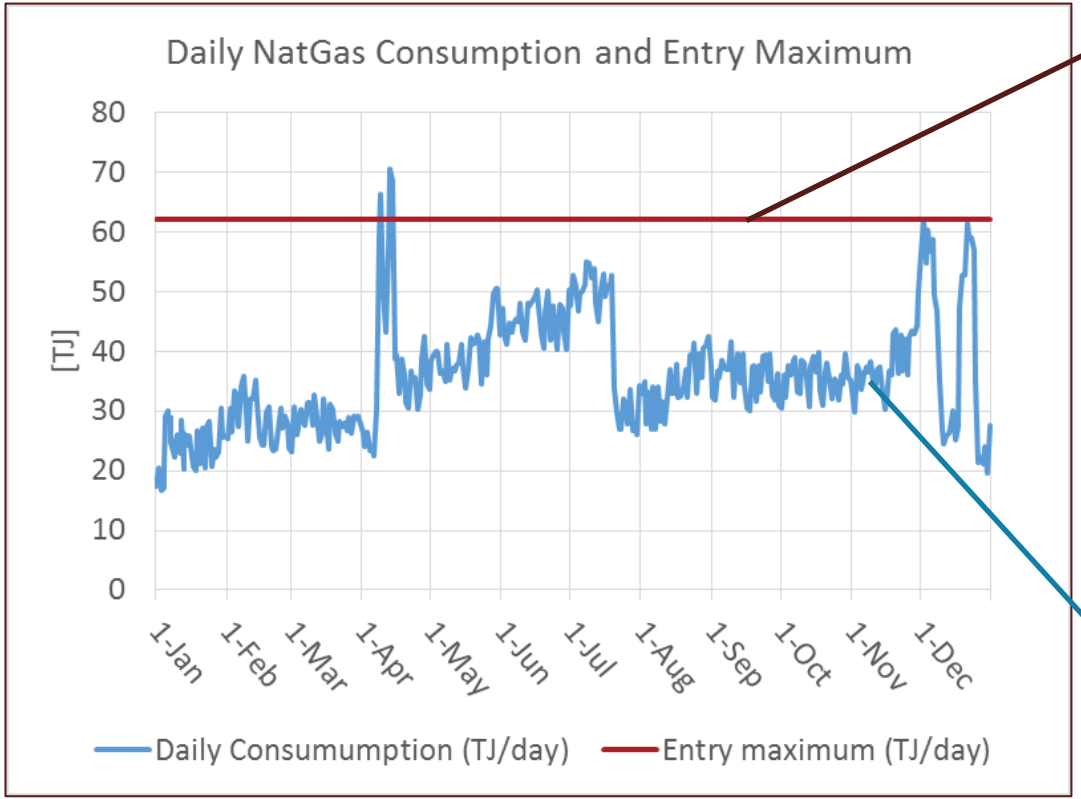
The Entry Maximum



Entry maximum

- Maximum allowed daily consumption
- Fixed for 2 years
- If the daily actual consumption is higher than the Entry Maximum → Penalty

Daily consumption

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Business Challenge

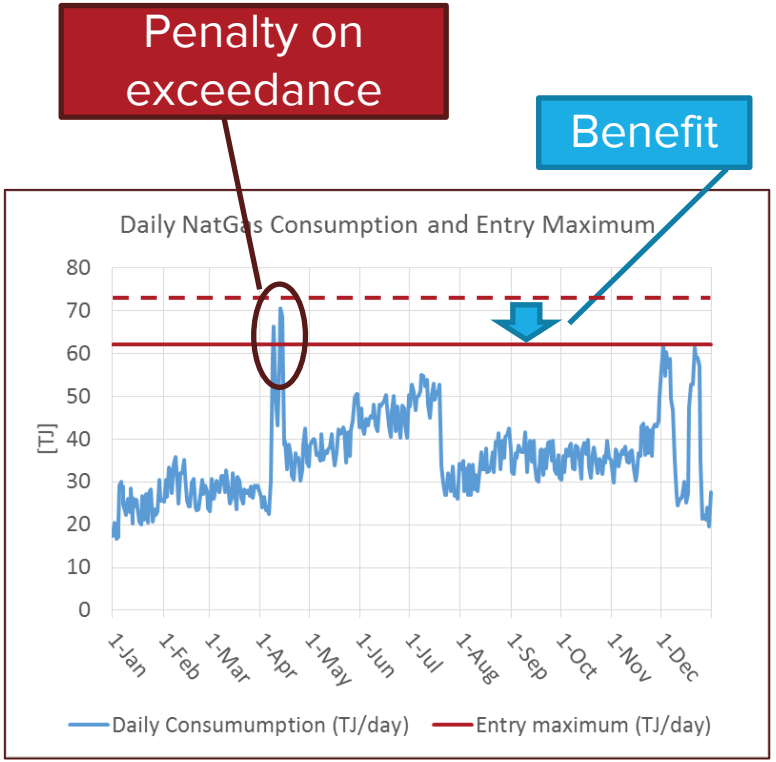
New MOL Hungary level contract

- Entry Maximum decrease → potential saving
- Entry Maximum fixed for two years
- High penalty on any exceedances
- Fluctuation in consumption

Objective

- Decrease the entry maximum
- Eliminate the chance of exceedance

- Eliminate the peaks of consumption



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Solution

Daily forecasting system

- Continuous calculation
- Based on consumption data
- **PI Asset Analytics**

New tool to improve cooperation

- Different sites accross the country
- Alerting system
- Up to date, valid information
- **PI Coresight**

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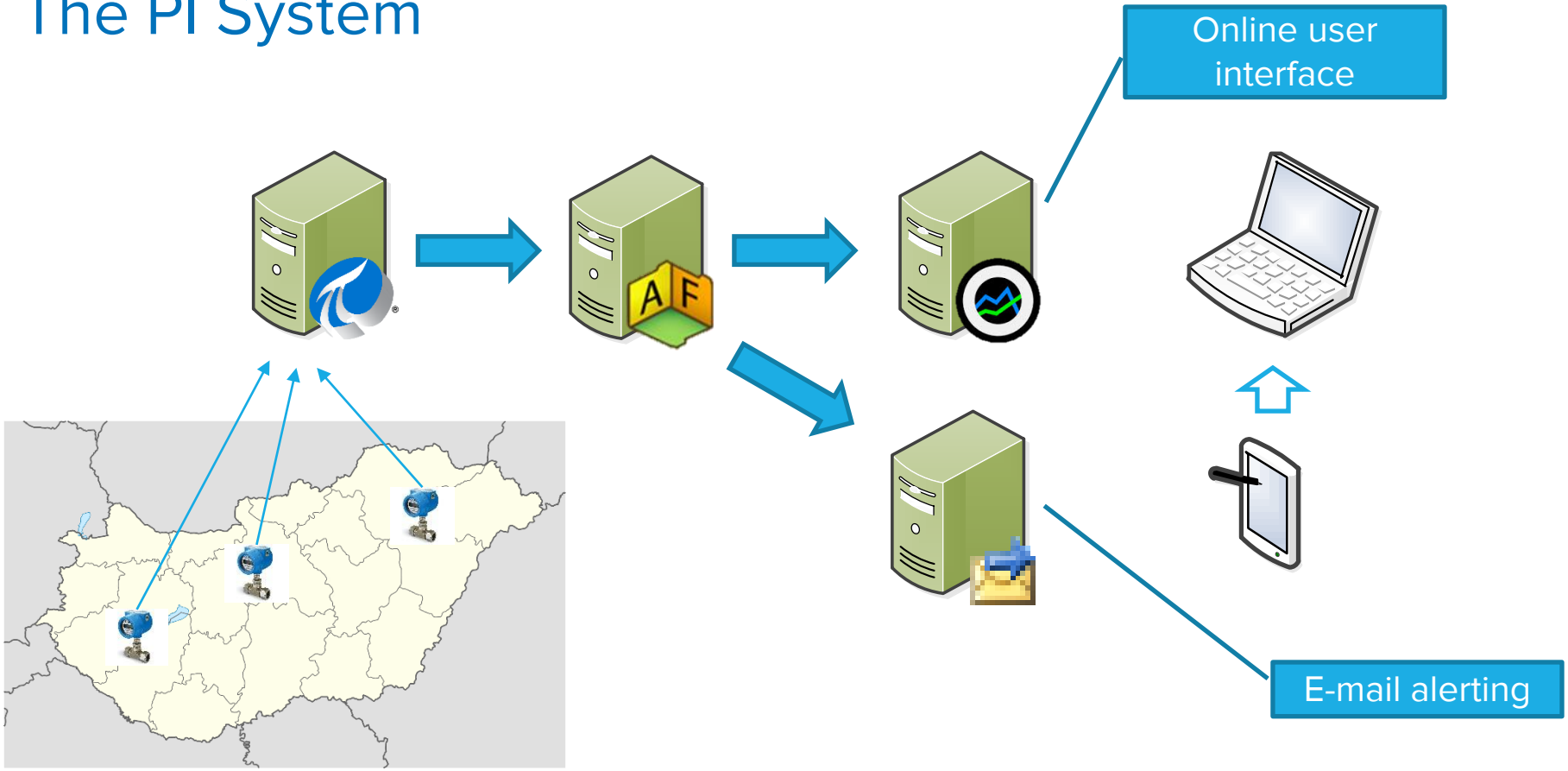
The PI System



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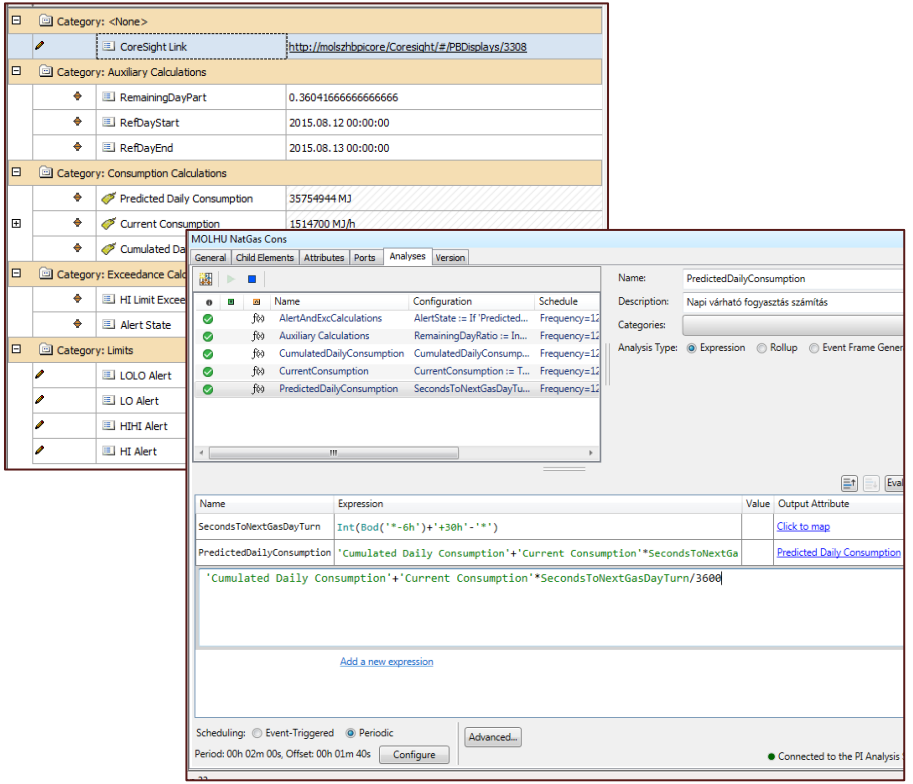
Technical details – data, calculation

The planned system

- Online calculation (extrapolation for one day)
- Input:
  - online sensor data
  - static data and
  - periodically filled manual data



Tools

- **Asset Analytics**
- **AF Tables** and **Lookup calculations**

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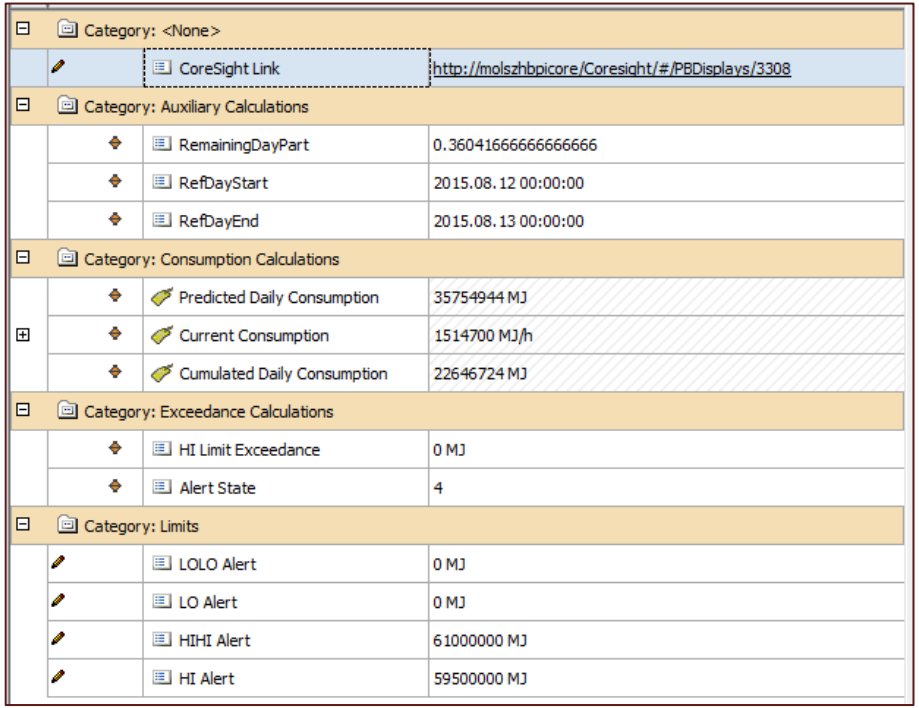
Technical details – Attributes, Analyses



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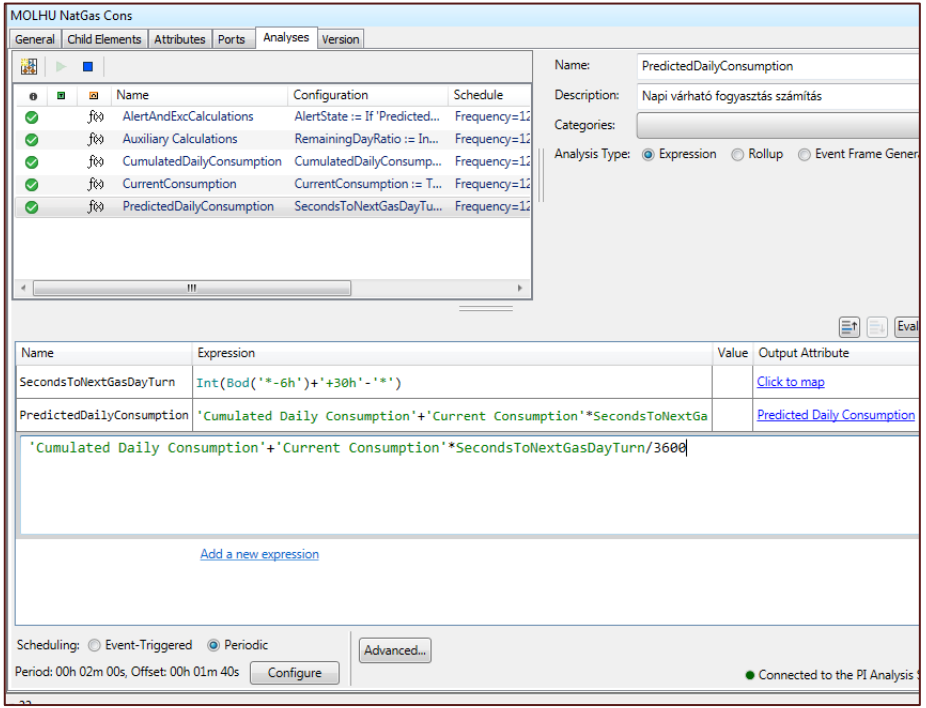
	RemainingDayPart	0.36041666666666666
	RefDayStart	2015.08.12 00:00:00
	RefDayEnd	2015.08.13 00:00:00
Category: Consumption Calculations		
	Predicted Daily Consumption	35754944 MJ
	Current Consumption	1514700 MJ/h
	Cumulated Daily Consumption	22646724 MJ
Category: Exceedance Calculations		
	HI Limit Exceedance	0 MJ
	Alert State	4
Category: Limits		
	LOLO Alert	0 MJ
	LO Alert	0 MJ
	HIHI Alert	61000000 MJ
	HI Alert	59500000 MJ



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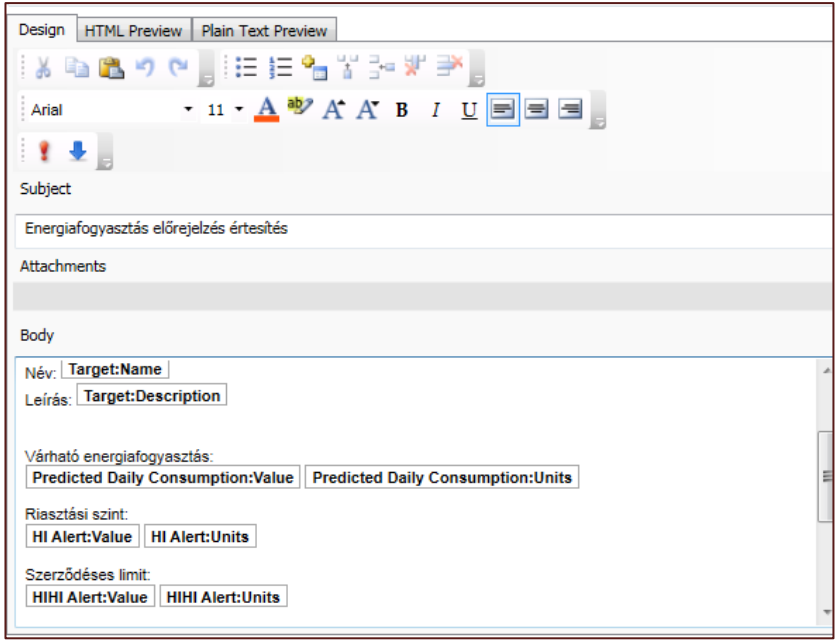
Technical details – alerting system

Challenge

- Only a few alerts
- Users can not be experienced
- Straightforward, simple system is crucial

Solution

- Notification e-mails contain all of the relevant information
- A link is also sent to the user interface



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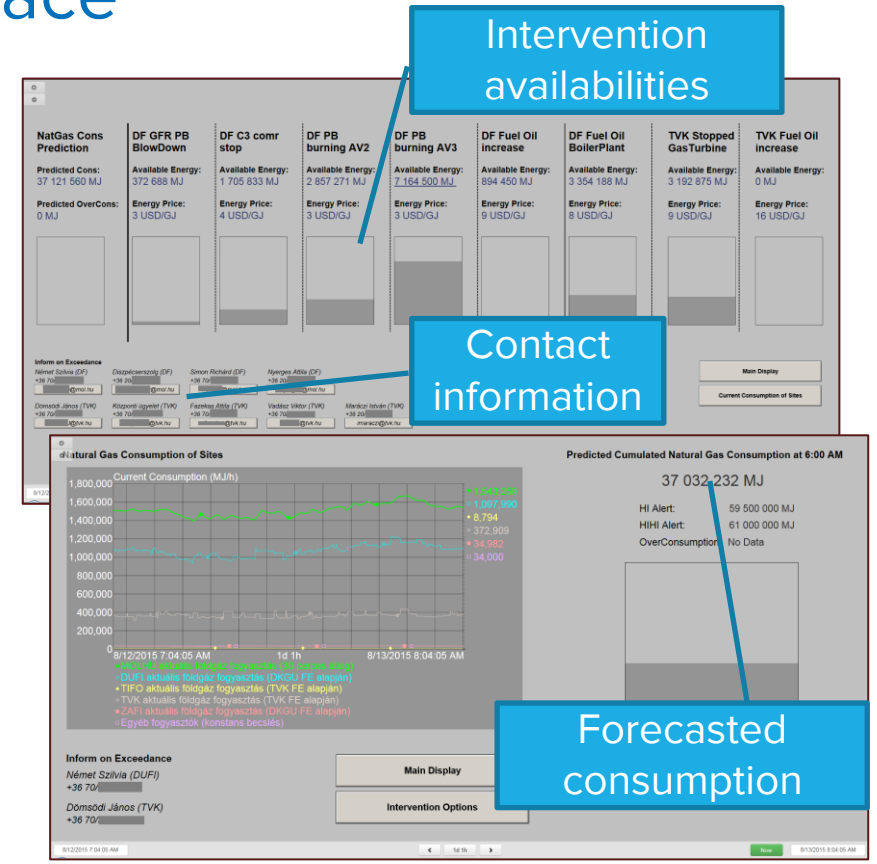
Technical details – user interface

Request

- Comprehensive source of information
- Support collaboration and decision making
- Easy to use surface
- Ensure that only the latest version is in use

Solution

- **PI Coresight**
- Navigation with buttons
- *„Mail to”* buttons to inform the decision makers
- Comprehensive displays about the intervention options (availability and price)



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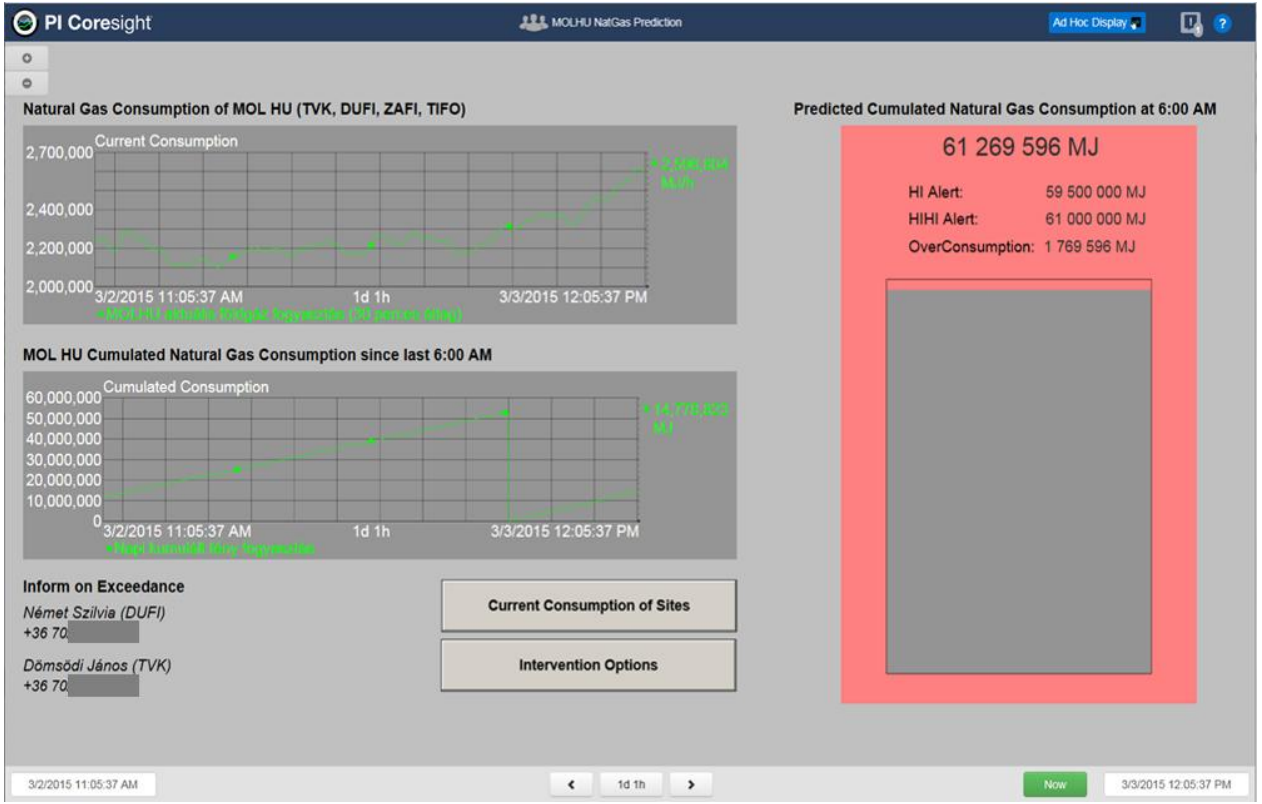
Results - The working system

Alerting

- Conversation started immediately after the alert
- Decision has been made in around 30 minutes
- Employees were informed

Business Impact

- 2 TJ/day Entry Maximum decrease
- 250 000 EUR savings



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Future possibilities

Calculation accuracy

- The accuracy of the forecasting calculation can be increased
- Involve daily scheduling data or unit operation mode
- **PI Server 2015 and Future Data**

Other energy types

- Increase the planning accuracy in case of other energy types
- Installation is very simple and fast
- **AF and Template Based Elements**

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Summary

„In God we trust. All others must bring data.”

W.E.Deming

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BUSINESS CHALLENGES

A. The goal: minimize the cost of natural gas contract

B. Cost savings through a lower entry maximum (daily consumption limit)

C. Higher risk of daily overconsumption had to be handled

SOLUTION

A. Advanced information system to increase Operational Efficiency

B. Forecasting calculation, alerting and collaboration support system

C. Asset Framework, Asset Analytics, Notifications, PI Coresight

RESULTS AND BENEFITS

- 2 TJ/day entry maximum decrease
- 250.000 EUR saving in the 2 years contract
- 5 months after the go-live the system worked perfectly in a real situation

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Contact Information

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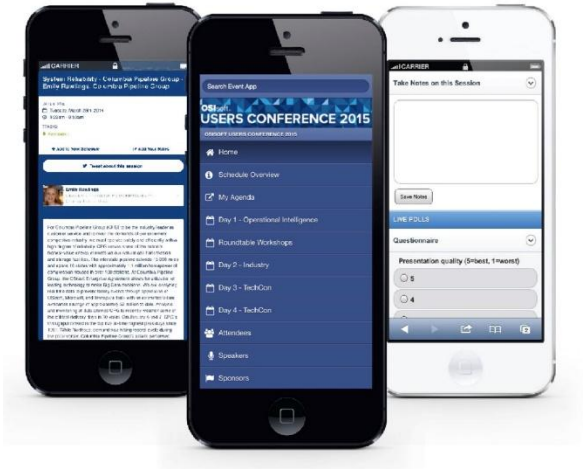
Questions

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

State your
name & company

Please don't forget to…

Complete the Online Survey for this session



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감사합니다

谢谢

Danke

Gracias

Merci

Thank You

Děkuji

Köszönöm

ありがとう

Спасибо

Obrigado

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W.E.Deming

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