

ISO 50001 Focused Energy Management Information System

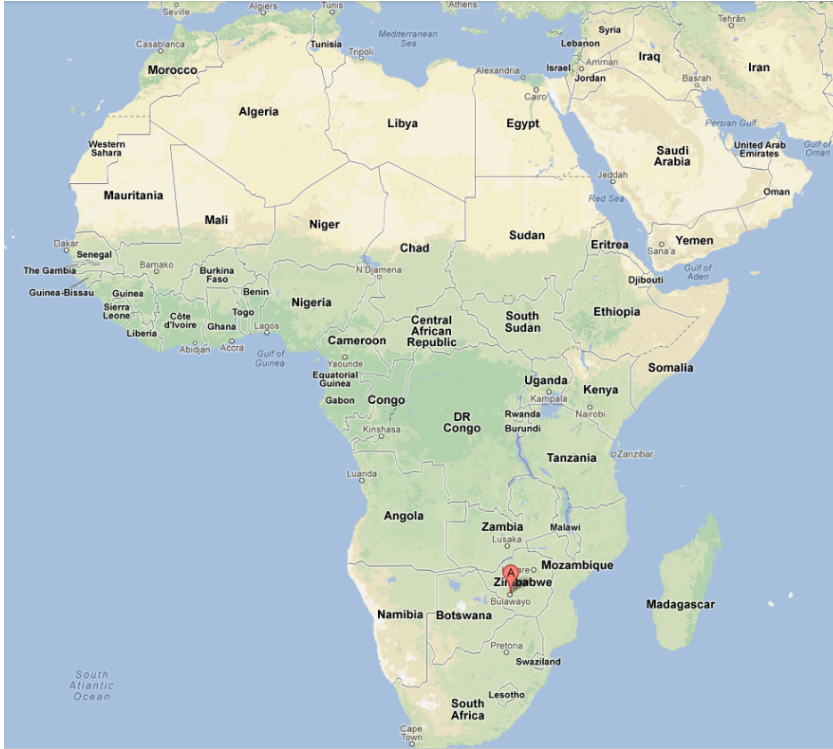
Presented by **Andrew Cooper – New Gold Inc.**

Steve Boyko – ADM Systems Engineering Ltd.



- Intermediate gold mining company
- 4 producing assets
- 2 development assets
- One of the lowest cost producers

My Background



What We Have...



- Project based energy management

What We Want...



- Fahrenheit to degrees
- Long-term & sustainable energy management
- Continual improvement
- Build into culture and systems



- June 2011
- Vehicle to achieve our vision
- ISO 50001 Compliant
– December 2013

EMIS Essential...

- Support ISO 50001
 - Energy objectives & targets
 - Monitoring, measurement & analysis
 - Deviations and notifications



- Excellent Tool
- Got us started 😊

Energy Account Centres

- Mill Processing
 - Grinding
 - Flotation
 - Tailings
 - Regrind
 - Filtration
 - Compressed air
 - Reagents
- Surface Facilities



Energy Account Centres

- Mining
 - Ventilation
 - Dewatering
 - Compressed Air
 - Batch Plant
 - Production
- Crushing & Conveying
 - Crushing
 - Conveying

Sub-Metering

- Data Concentrator
- 147 Electrical Sub-meters
 - 66 Existing, 81 New
- Gas Metering
 - 4 New, 2 Pulse Hand-off
- Manual Entry




Software

- Specifications
 - All data in PI System
 - Support ISO 50001
 - Meet EMIS criteria in NR Canada Guidelines
 - Do it in 3 months
- RFP
 - Referrals from OSIsoft
 - 7 RFP's; 5 Bidders

Selection



- Experience in industrial
- PI System backbone
- References
 - Happy 
 - Installing more
- Ability to meet timelines

Fast Track



- Planning – May 2012
- Start sub-metering – August 2012
- Capital – September 2012
- RFP – October 1, 2012
- PO issued – November 19
- RtEMIS installed – December 3
- Handover – December

People



- G1
- Martin Loveridge
- Intel Control Service

People



- G2
- Steve Boyko
- ADM Systems Eng.



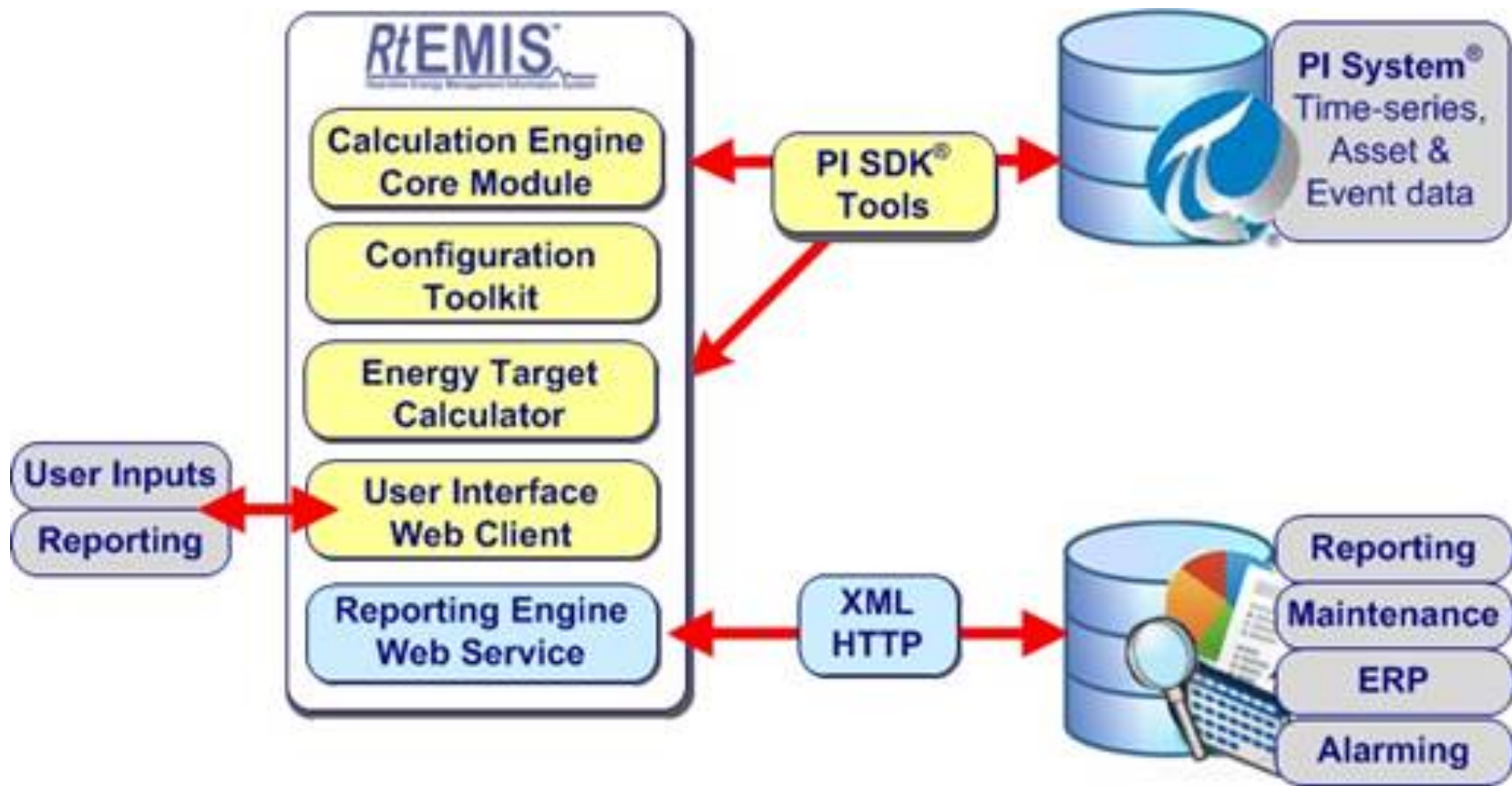
- ADM is an engineering company specializing in industrial automation, data management and mechanical design
- As an OSIsoft partner, our Data Management group performs PI work as well as application development and system integration

Existing New Gold Infrastructure

- PI server
- OPC interface for DCS
- CoreSight for most users
- ProcessBook/DataLink for metallurgists

Additional Infrastructure

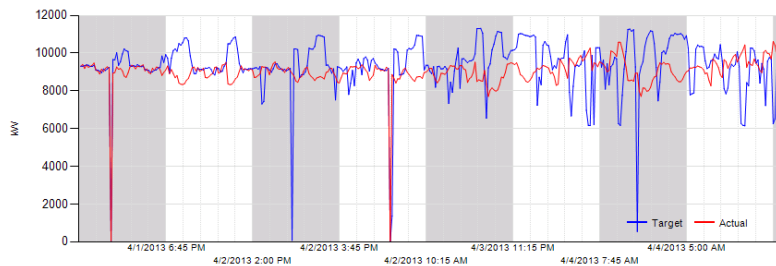
- Metering network and data concentrator PLC
- OPC interface for PLC
- App server for RtEMIS' web front end
- SQL Server for RtEMIS database



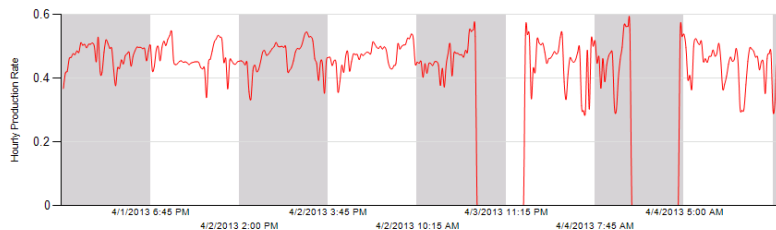
Start Date: 4/1/2013

End Date: 4/4/2013 8:40:52 PM

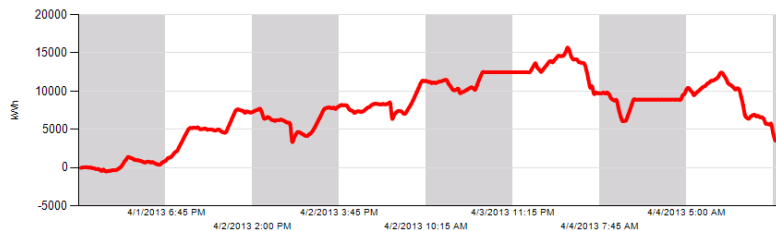
Target vs. Actual Consumption Rate



Production



Cumulative Sum of Energy Saved vs. Target



Start Date: 2/25/2013

End Date: 3/1/2013

Total Cost



ELEC COST Diesel COST Gasoline COST Propane COST Explosives COST
GAS COST

Area	EAC	Electricity	Diesel	Gas	Gasoline	Propane	Explosives
Crushing/Conveying	Conveying	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Crushing	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Totals	\$2,200.00	\$2,200.00	\$2,200.00	\$2,200.00	\$2,200.00	\$2,200.00
Mill Processing	Grinding	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Flotation	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Regrind	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Dewatering	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Tailings	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Reagents	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Water	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Compressed Air	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Cooling	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	HVAC	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Utilities	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Assay	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
	Totals	\$13,200.00	\$13,200.00	\$13,200.00	\$13,200.00	\$13,200.00	\$13,200.00

Configuration Toolkit



Challenges

- Virtual meter definition
- Gas meter scaling
- Data quality / meter resets

RtEMIS Next Steps

- Upgrade to latest RtEMIS version
- RtEMIS' Energy Target Calculator
- Replace some manual inputs with automated data feeds (diesel consumption, mine production)

Benefits

Tangible

- Baselines
- Grinding Energy Intensity
- Energy Cost Allocation
- Energy Studies

Intangible

- PR
- Awareness

Lessons Learned

- More complex than imagined
- Production trumps installation
- Include in new design specifications
- Utilize a Historian database

Going Forward

- Align with ISO 50001
- Budgeting and forecasting
- Proof of concept... Was it worth the



Conclusion

Our vision is to make continual energy performance, at New Gold, self-sustaining. Something that is done by all employees on a day-to-day basis as part of what we do at New Gold.

Andrew Cooper

andrew.cooper@newgold.com

Energy Specialist

New Gold Inc.



Steve Boyko

boykos@admse.com

IT Project Manager, PIMS & Applications Specialist

ADM Systems Engineering Ltd.





THANK

YOU

Brought to you by

