



# NBW in practice Odda improvement programme

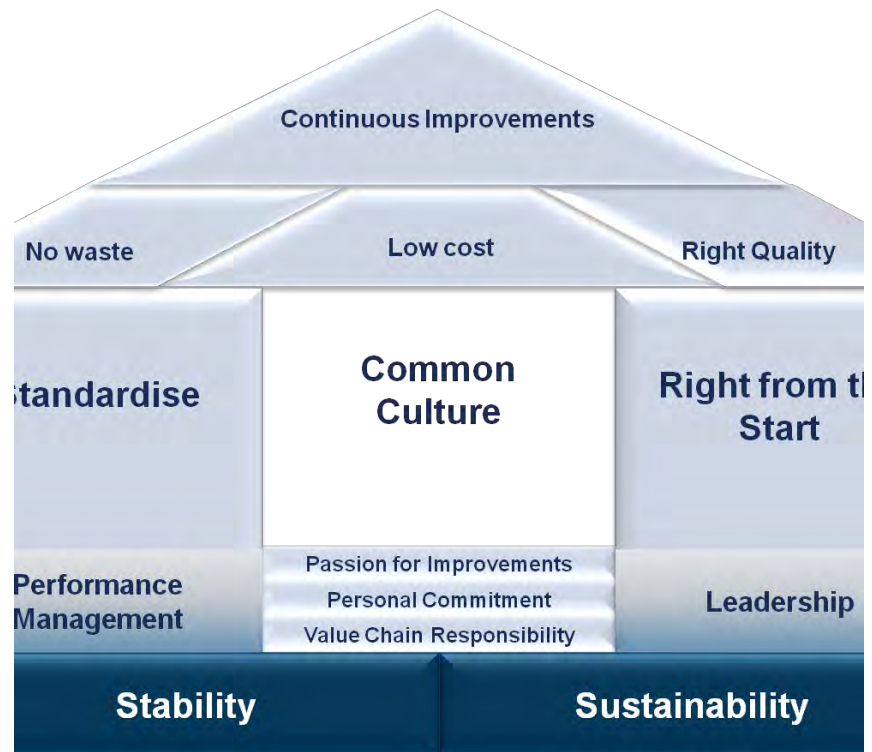
Capital Markets Day  
November 23rd 2012

Dag Berg  
General Manager, Boliden Odda

**BOLIDEN**

# Our Values

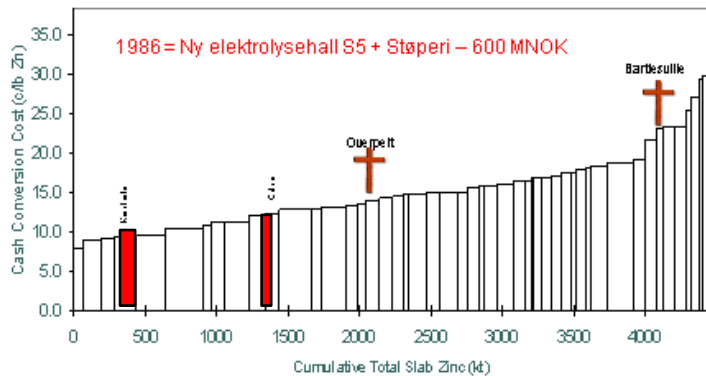
- Passion for improvements
  - Work smarter
  - Give that little extra
- Value chain responsibility
  - We are all experts in the value chain
  - We must all do the right thing
- Personal commitment
  - We are all problem solvers
  - Problems are dealt with as soon as they appear



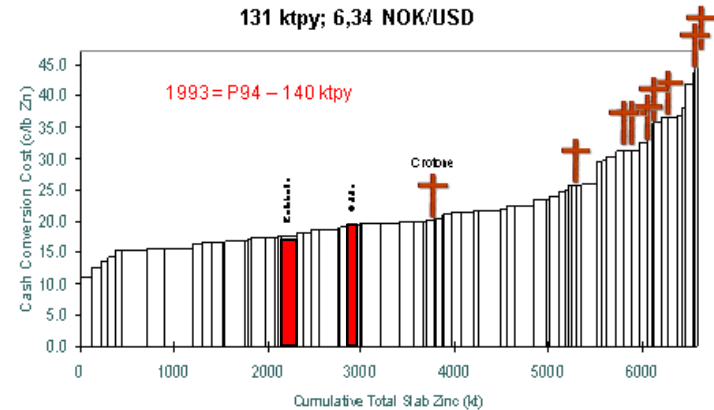
# Business Case

Our competitive position has deteriorated

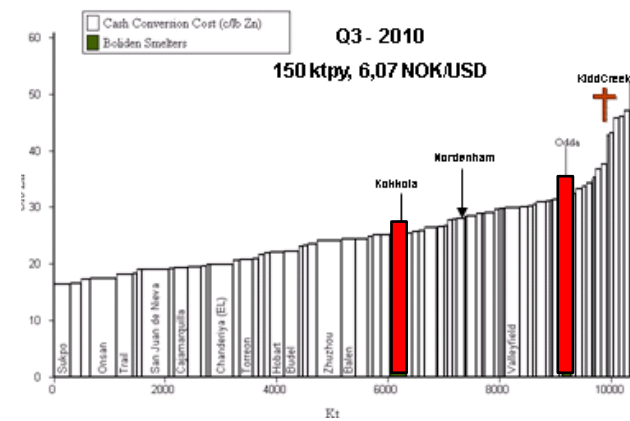
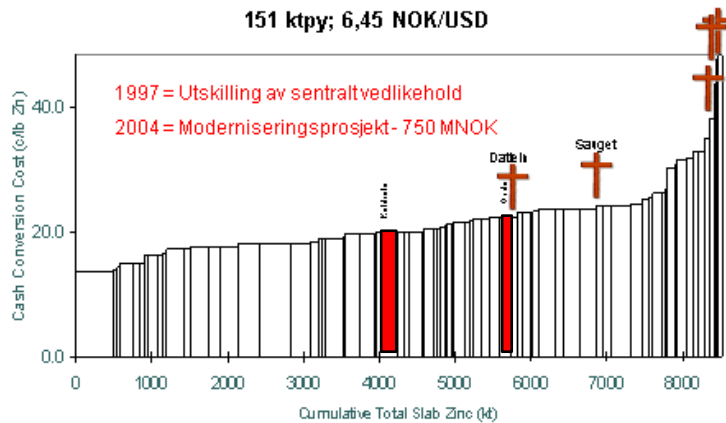
**1985 – Cash Conversion Cost**  
112 ktpy; 8,59 NOK/USD;



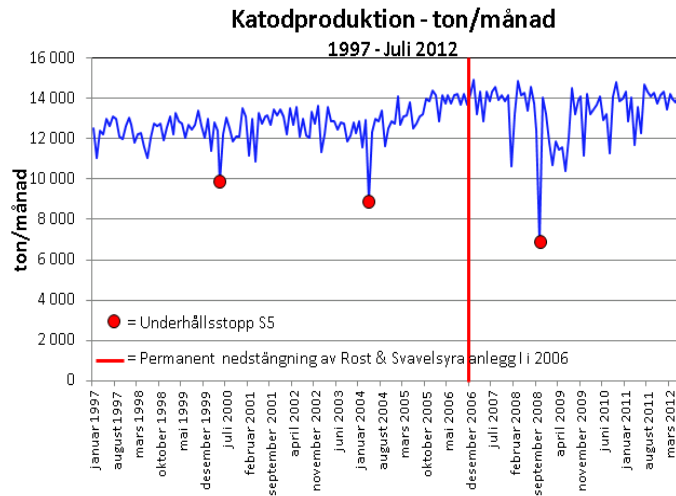
**1995 – Cash Conversion Cost**  
131 ktpy; 6,34 NOK/USD



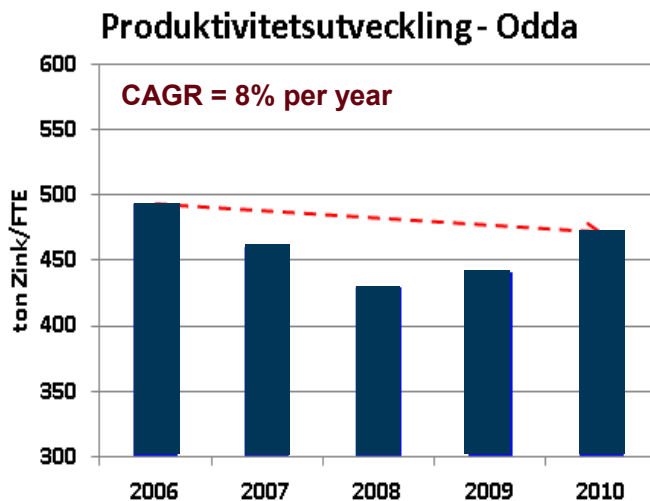
**2005 – Cash Conversion Cost**  
151 ktpy; 6,45 NOK/USD



# Our competitive position has deteriorated

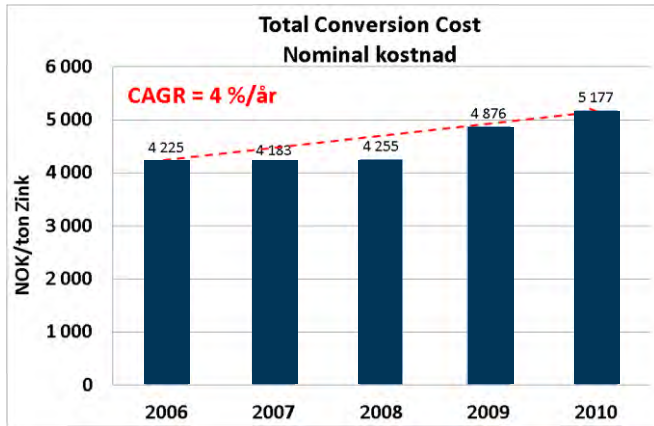


Unstable production



Negative productivity development

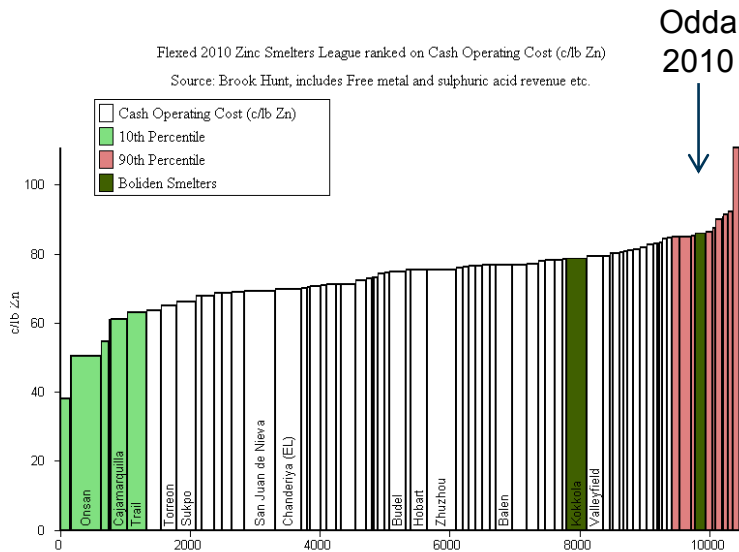
# Our competitive position has deteriorated



Increased unit cost



Deteriorating cost position



# Our Improvement Programme P100

## The P100 way of working

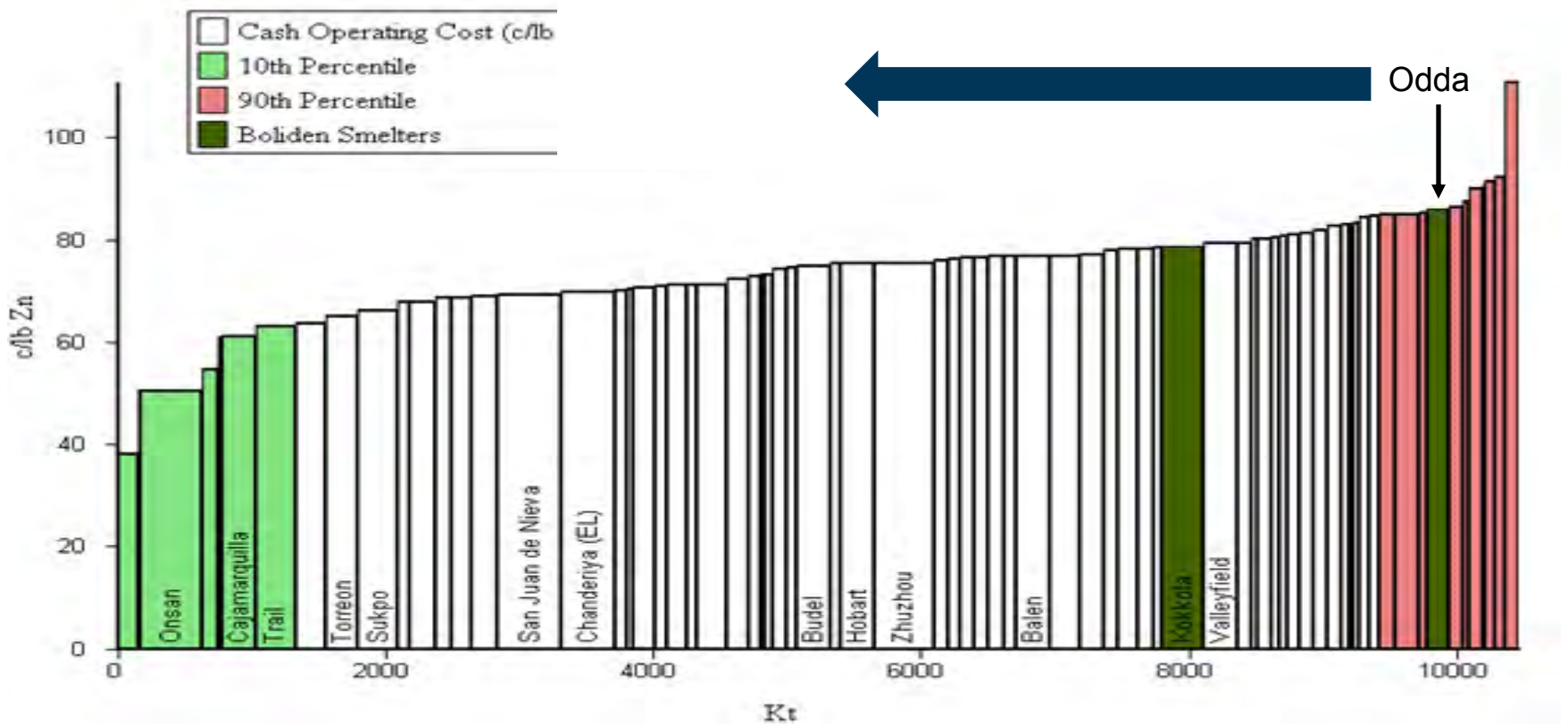
- From launch in 2011 until 2013
  - Facts and Analysis
  - Creating a common "as is" and "the enemy" picture
  - Describing a vision and measurable target
  - Action plans
  - Grow passion and engagement - team work



# P100 Target – 2011-2013\*

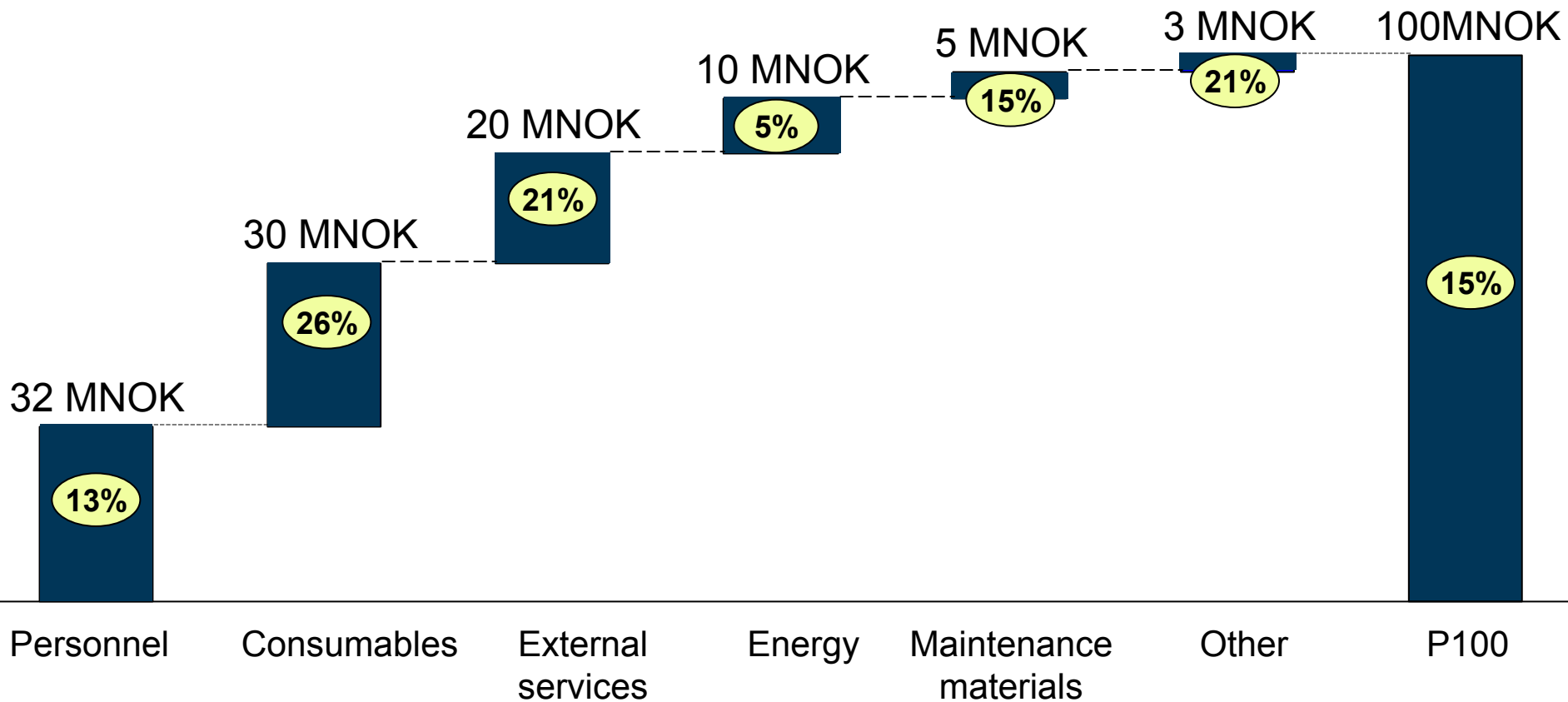
Target spring 2011 - Gap 100 MNOK

Brook Hunt Operating Cash Cost – 2010



\* Brook Hunts estimated 2010 cost curve at new year 2010/2011

# P100 - Ambitious and clear cost reduction targets are identified\*



\* Baseline 2010

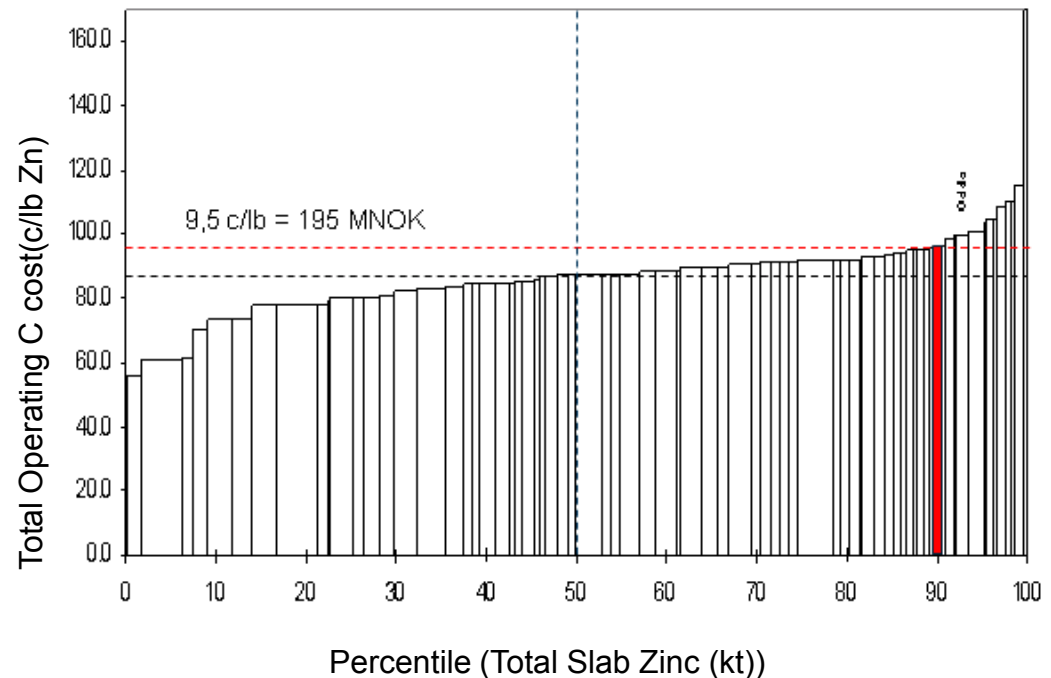


# Revised P100 Target 2011-2013

Revised target autumn 2011

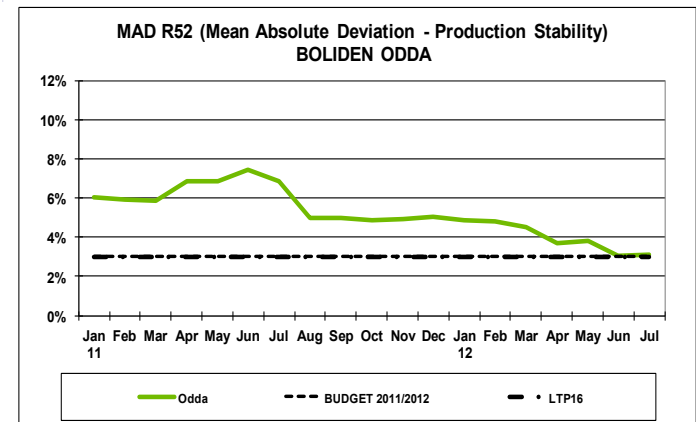
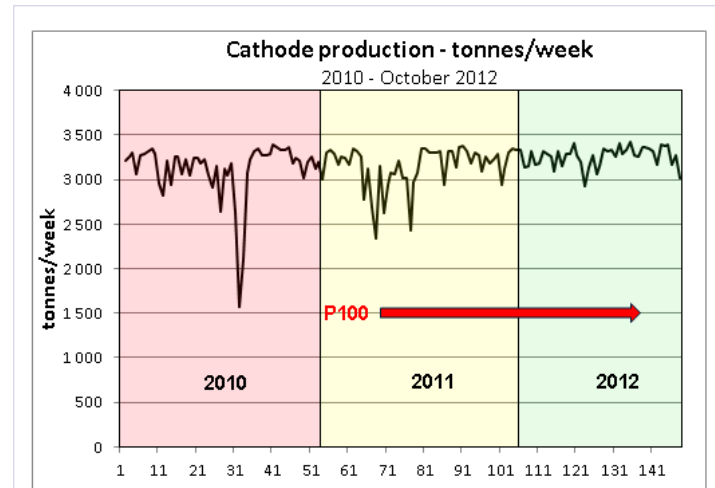
- General cost reductions (USD/tonne) in industry larger than anticipated
- Actual cost gap was 195 MNOK
- Revised target to 120 MNOK in combination with increased productivity target
- Capex effective de-bottlenecking identified

Brook Hunt cost leage curve



# P100 Results – Production stability

- Improved production stability
- Production record in the foundry July 2012
- Boliden's stability target has been reached
- Aim is to maintain stability and challenge "claimed" bottlenecks

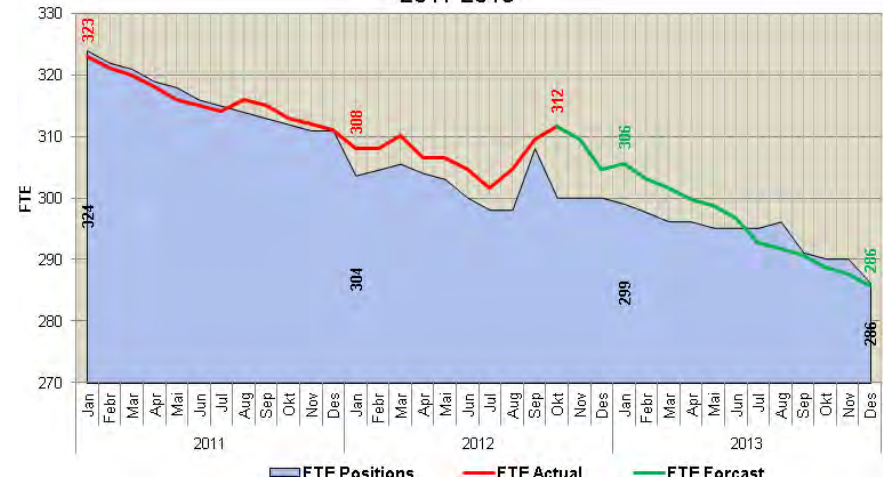


# P100 Results – Manning & Labour

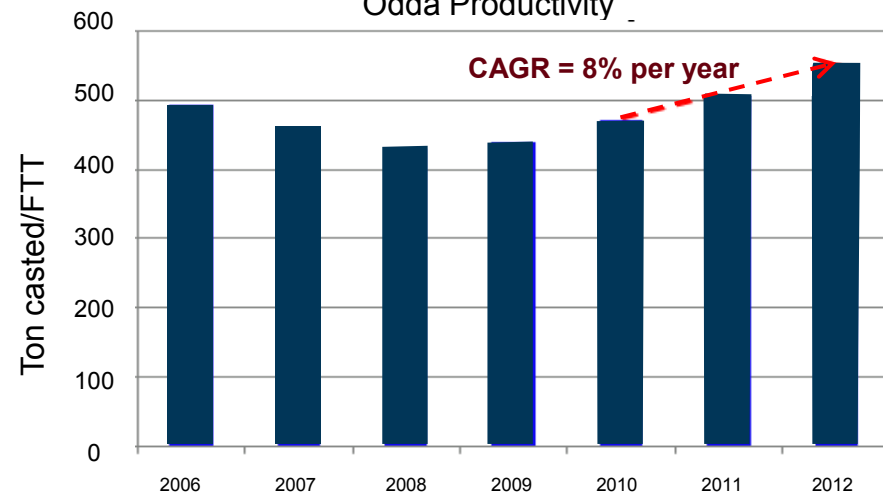
- Odda is on plan YTD = - 23 FTE
- FTE reduction @ end of 2013 = - 49 FTE
- Large need for training of personnel in new positions
- Great flexibility and commitment among employees
- Two years with an average wage increase of 3-4 % lower than the average in Norwegian industry
- Productivity increase 8,5 % per year

P100 – FTE Plan

2011-2013



Odda Productivity



**BOLIDEN**

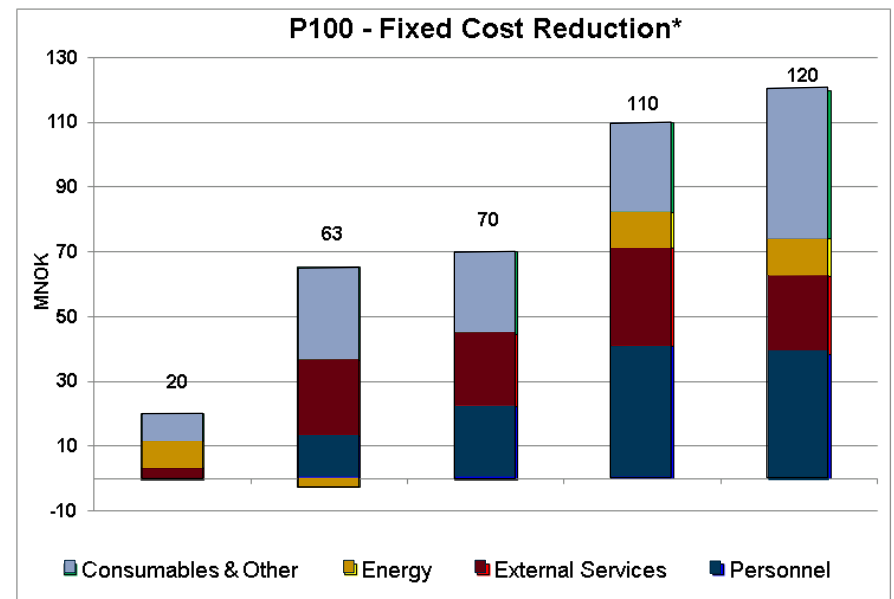
# P100 Results

## Fixed Cost Reduction

- Realised cost reductions per October 2012 is 63 MNOK
- Approx 70 MNOK annualized
- Further potential identified bringing 2013 cost reduction up to 110 MNOK
- Still to be identified for 2013 is 10 MNOK in order to reach the target 120 MNOK

Cost Element					P100 Plan
Personnel & Productivity	0,0	13,1	22,1	40,8	38,4
External Services	3,2	23,3	22,2	30,3	24,0
Energy	8,5	-2,8	-0,5	11,0	12,0
Consumables & Other	8,3	29,0	25,8	27,9	45,6
<b>Sum</b>	<b>20</b>	<b>63</b>	<b>70</b>	<b>110</b>	<b>120</b>

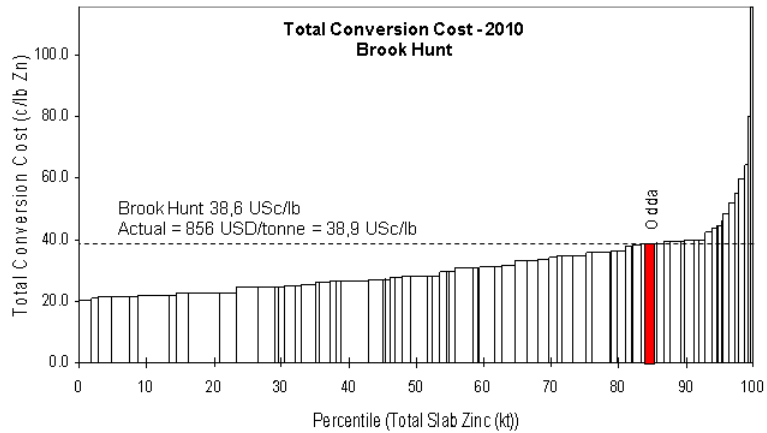
\*Volume adjusted @ baseline 2010



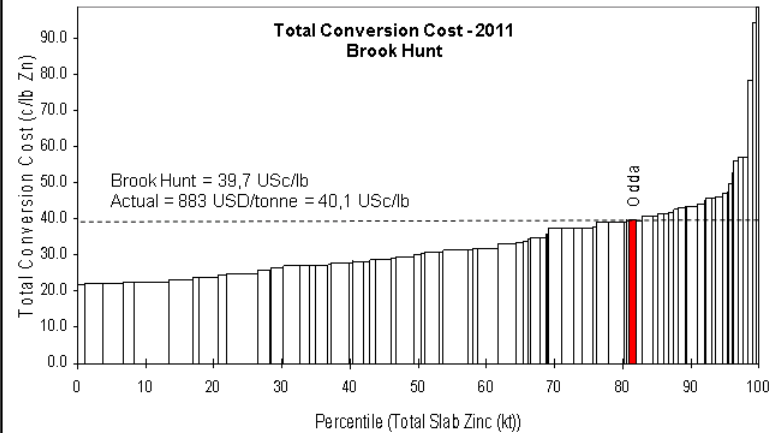
\* Volume adjusted cost reduction compared with baseline 2010

# Past and Present Position

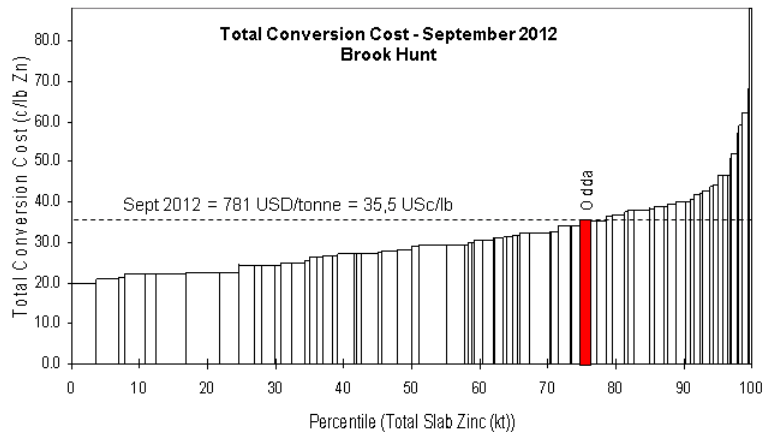
2010



2011



2012



2010 → September 2012

- Conversion cost reduced with > 600 NOK/ton
- Cost position improved from 84 to 75 percentile

# Direct Leach Reactor Collapse



- October 27th the DL Reactor 1 failed
- DL plant out of operation until Dec 10th
- Production loss 6 000 tons cast zinc
- Veritas engaged to identify root cause



# Odda improvement programme – to conclude

## Achievements so far

- Cost reductions on plan
- Cost position improved
- Employees committed to the target
- Process stability has been re-stored
- Productivity has increased
- P100 finalized end of 2013
- Further productivity projects in the pipeline
- Temporary set-back due to Direct Leach Reactor failure

## Success factors

- Clear and agreed "as is" situation
- Realistic action plans on reach a "wish to be" situation
- Employee motivation to secure own working places
- Unions committed to change process
- Management walk the talk, e.g. decisions are effectively and powerfully implemented
- Clear responsibilities (stability, quantity, quality and cost)
- Stringent follow-up
- Achieved results are broadcasted to all employees --> creates a winning spirit



**Metals for modern life**