



Lake Turkana Wind Power (LTWP)

Vestas role.

Henrik Kanstrup Jørgensen – Vestas

Vestas' Strategy

Our strategic objectives

Grow profitably in mature and emerging markets

Our goal is to grow profitably in mature and emerging markets – with a mid-term aim to grow faster than the market.

Capture the full potential of the service market:

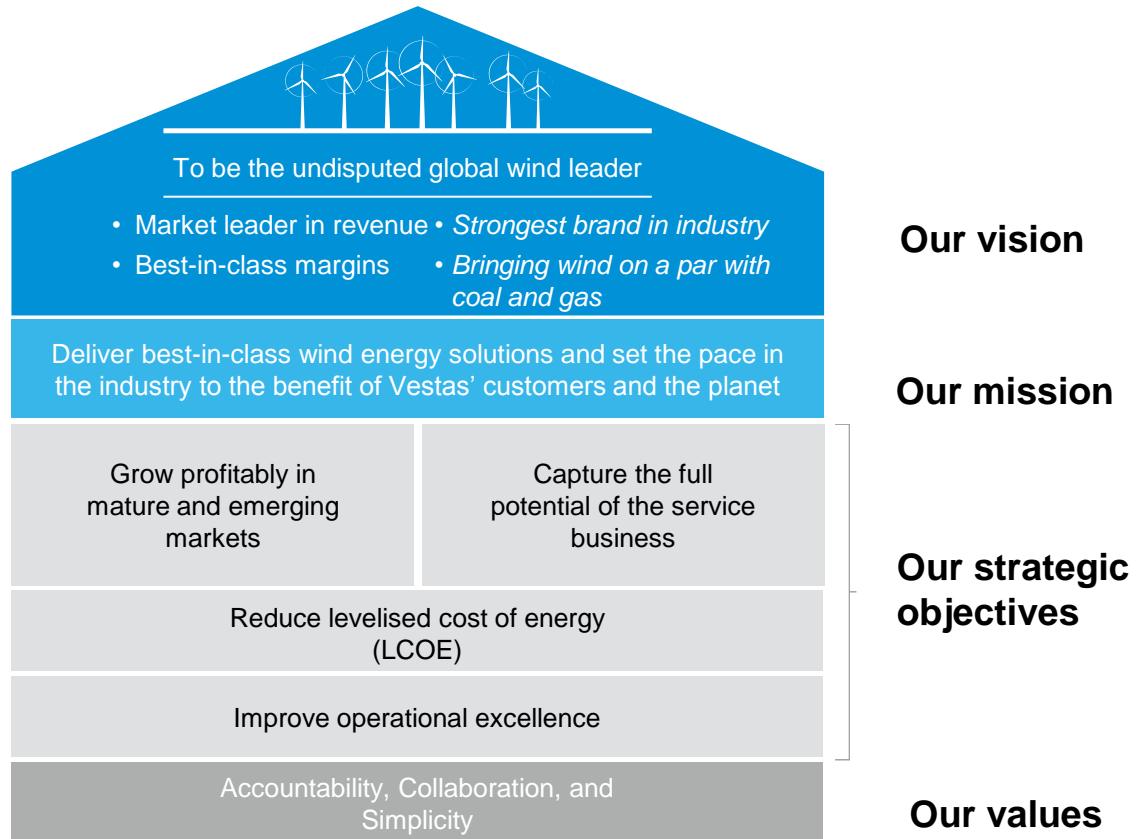
Our goal is to capture the full potential of the service business – and to grow this business by more than 40% in the mid-term.

Reduce levelised cost of energy (LCOE):

Our goal is to reduce the levelised cost of energy faster than the market average.

Improve operational excellence:

Our goal is to achieve operational excellence in every aspect of the business.



Vestas' value chain = Vestas role in LTWP

Technically fairly standard using our world leading wind energy solutions and large range of capabilities



Project planning and design

Ensuring high quality project planning and design helps to maximise total return on investment from project start-up.



Procurement and manufacture

Vestas works closely with customers to meet their individual needs and requirements for procurement and manufacturing.



Construction and installation

Vestas possesses construction and installation expertise to coordinate cooperative efforts or assume full responsibility for wind power plant construction and commissioning.



Operation and maintenance

Vestas provides preventive and corrective service and maintenance for consistently optimised performance.

Vestas role

Financially, the road to toward today special

Vestas is part of the Equity finance

Agreement with Google in 2015

Normal method below

Project lifecycle and associated guarantees

The complexity and size of a wind project imply high demand on payment and risk mitigations



- 2006 Idea formed
- April 2008. LTWP and Kenya Power agreement
- 2008-2009 Wind measurement ongoing.
- 2011 Vestas wind & Site report
- January 2012 Vestas announcement

Company announcement from
Vestas Wind Systems A/S



Aarhus, 6 January 2012
Company announcement No. 2/2012
Page 1 of 1

Information in the market regarding project in Kenya

Today there is information in the market regarding a 310 MW project in Kenya.

Vestas can confirm that Lake Turkana Wind Power (LTWP) and Vestas have signed a conditional order for the Lake Turkana Wind Power project in Kenya. As soon as the order becomes firm and unconditional, Vestas will immediately thereafter make a company announcement concerning this.

Lake Turkana Wind Power

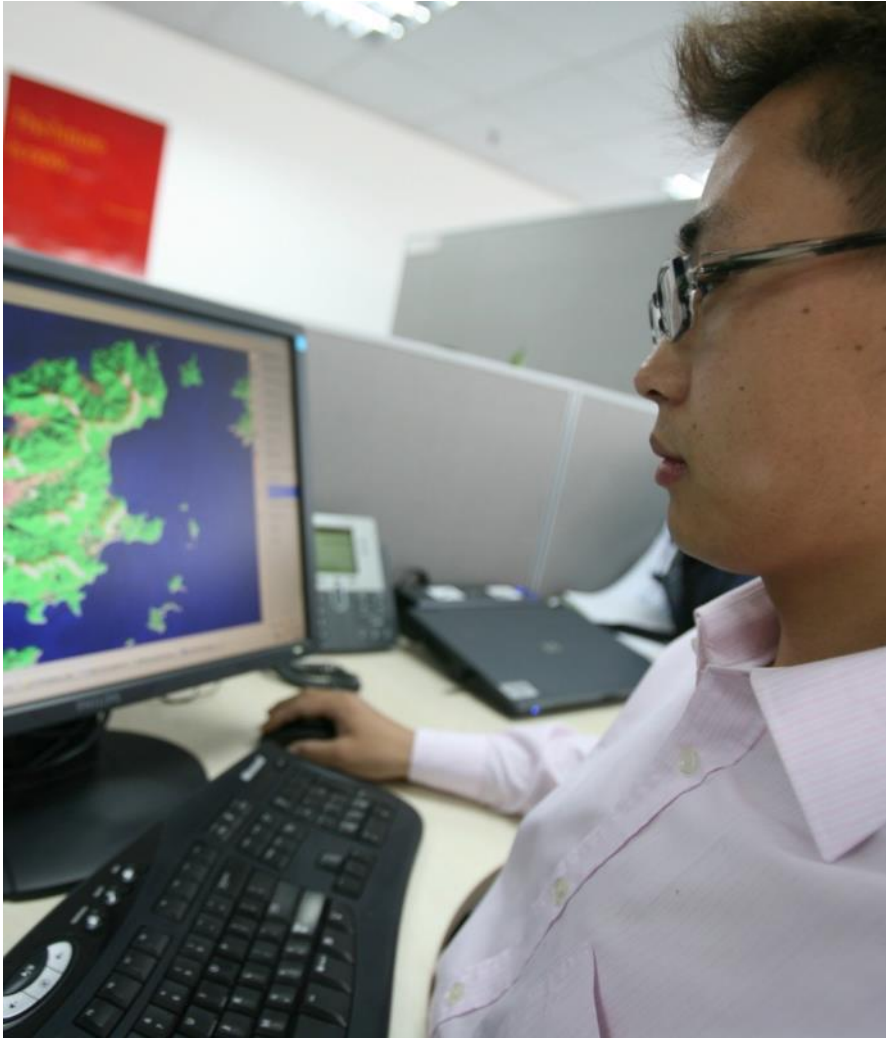
Site Approval

Layout and WSM-settings

	Name:	Date:	
Written by:		14-07-2011	

Industry leading technology and insight in project planning

Vestas project planning and design lays the groundwork for successful solutions



Project planning and design

Maximising total return on investment from project start-up

- **Data.**
Combining site data with our data.
- **SiteHunt®**
Advanced analysis of potential sites for optimum wind power performance.
- **SiteDesign®**
Optimising return on investment by examining the cost-revenue ratio.
- **Electrical PreDesign**
Optimising the design of electrical components for reliable performance.
- **Survey and guidance**
how to transport, what needed etc.

History

- Spring 2014 . Conditional supply agreement specifying all terms and conditions in expectation of unconditional order in August.
 - Main uncertainty was financing of grid line.
 - Vestas start internally to prepare on the delivery, logistical and technical detail.
 - Updating WTG and production information.
 - Special towers due to transport
 - Scheduling demand etc.

TOP 7 risks with mitigation plans

Area	Risk
Sourcing	No components for nacelle assembly
Tower	Nested tower solution failure
Sales	Lack of business
Production	Production failure
Project	Project failure
Production	Blade production capacity
Production	Control production failure

- December 2014 unconditional order

Aarhus, 11 December 2014
Company announcement No. 45/2014
Page 1 of 1

Vestas receives 310 MW order in Kenya

Vestas has received a firm and unconditional order for 365 V52-850 kW turbines for Kenya.

Additional information about the project:

Customer:	Lake Turkana Wind Power Ltd.
Project name:	Lake Turkana
Location/Country:	Kenya
Number of MW:	310 MW
Number of turbines/turbine type:	365 V52-850 kW turbines
Contract type:	Supply-and-installation
Contract scope:	Supply, installation, and commissioning of the wind turbines as well as a 15-year service agreement (AOM 4000).
Time of delivery:	Installation of the wind turbines is expected to begin in the first half of 2016 and the wind power plant is expected to be commissioned in the second half of 2017.

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- October 2015 Google announcement.
 - Back to normal practice finance wise.

News release from Vestas Wind System A/S

20 October 2015
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Google to buy Vestas' shares in Lake Turkana Wind Power

Upon completion of the project in 2017, Google will acquire Vestas' 12.5 percent stake in Africa's largest wind park, which will supply around 15 percent of Kenya's electricity needs based on current generation capacity

The share purchase agreement was announced in Washington, DC, in connection with U.S. Secretary of State John Kerry's Climate and Clean Energy Investment Forum and builds on a long-standing relationship between Google and Vestas, which also includes the 270 MW Alta Wind Energy Centre in southern California and the powering of a Google data centre in Finland.

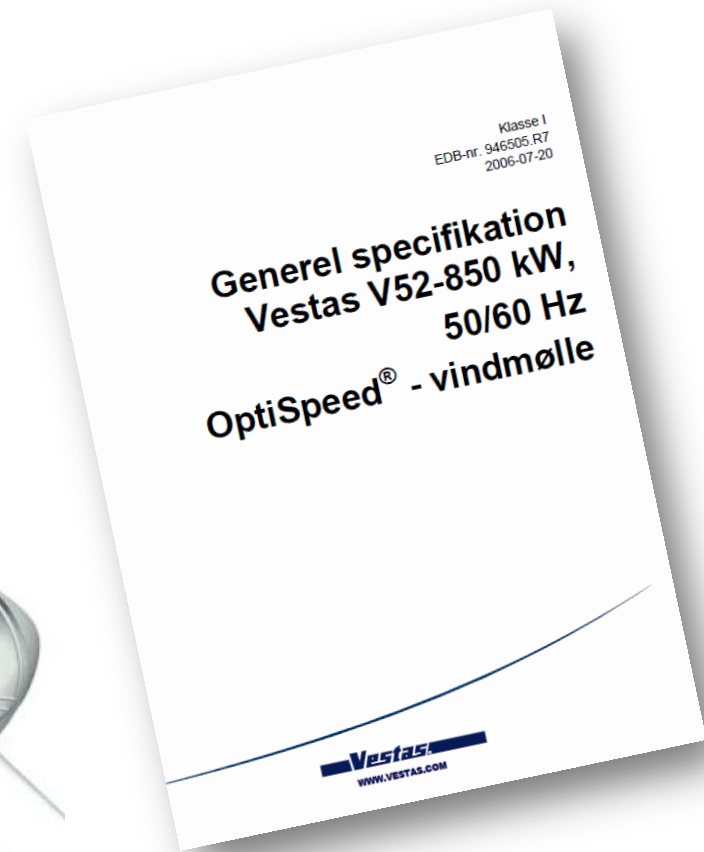
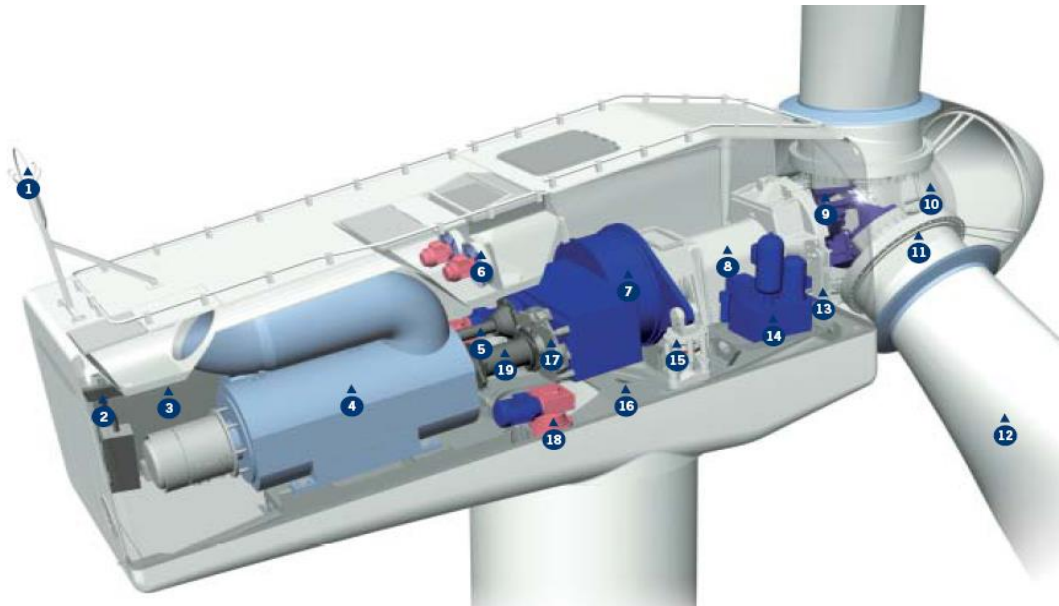


V52 til Lake Turkana projektet

IDA Global Udvikling, Torsdag den 2. juni, 2016

V52 til Lake Turkana

- IEC IA - Middelvind 10m/s – Ekstremvind 50/70m/s
- 52m rotor diameter ; 850kW generator
- Tårnhøjde på 44m
- Moderne hydraulisk pitchreguleret mølle
- Konverter med doublefødet induktions generator
- Teknologi, der i dag findes i Vestas moderne møller



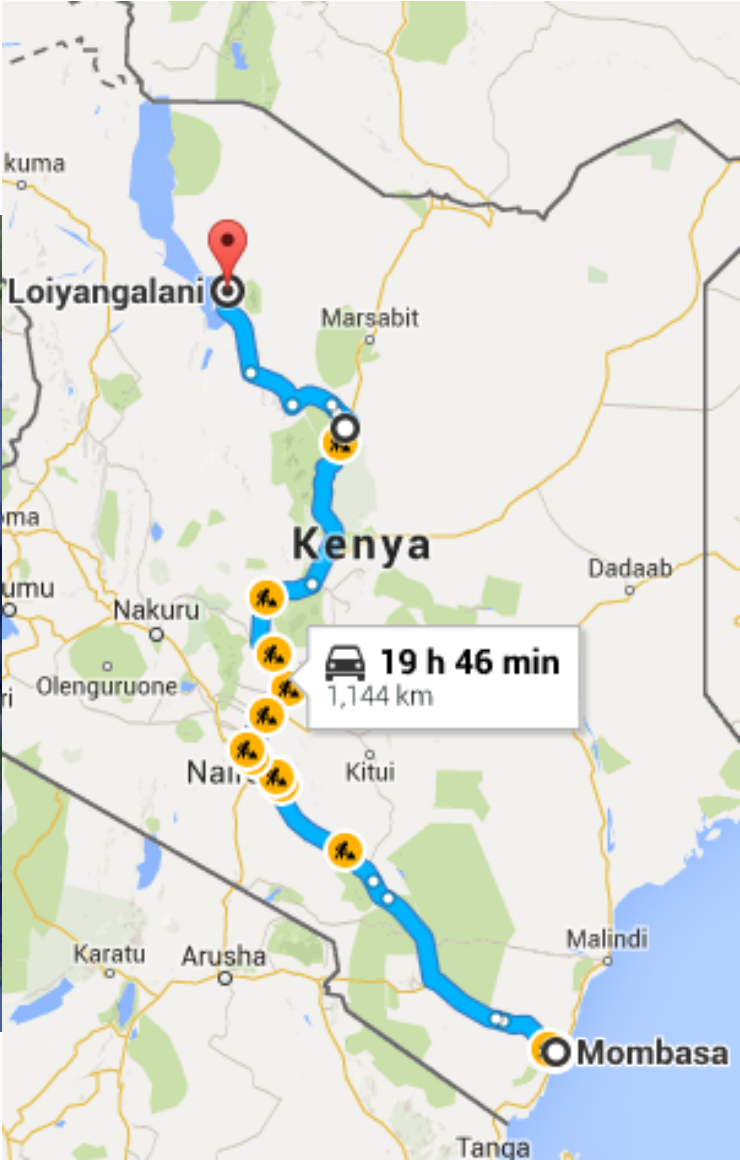
- 12 m/s at 44 meters e.g. no need or not possible to install MW machines
- Huge logistical advantages due smaller sizes
- Specific tower design possible reducing number of truck loads and weight of tower
- Easy maintenance machines

V52 produktion

- Platforms projekt med formål at genåbne V52 produktion i Tianjin, Kina
 - Gennemgang af erfaringer fra nuværende V52 flåde (+4000 møller: CN:1800; DK: 85; SE: 150; GER:300; NL:200; UK: 200; I:800; GR:300)
 - Afstøvning af produktions dokumentation
 - Implementering af High Temperature variant
 - Re-initiering af supply chain
 - Special tårn fremstilling p.g.a. transport optimering

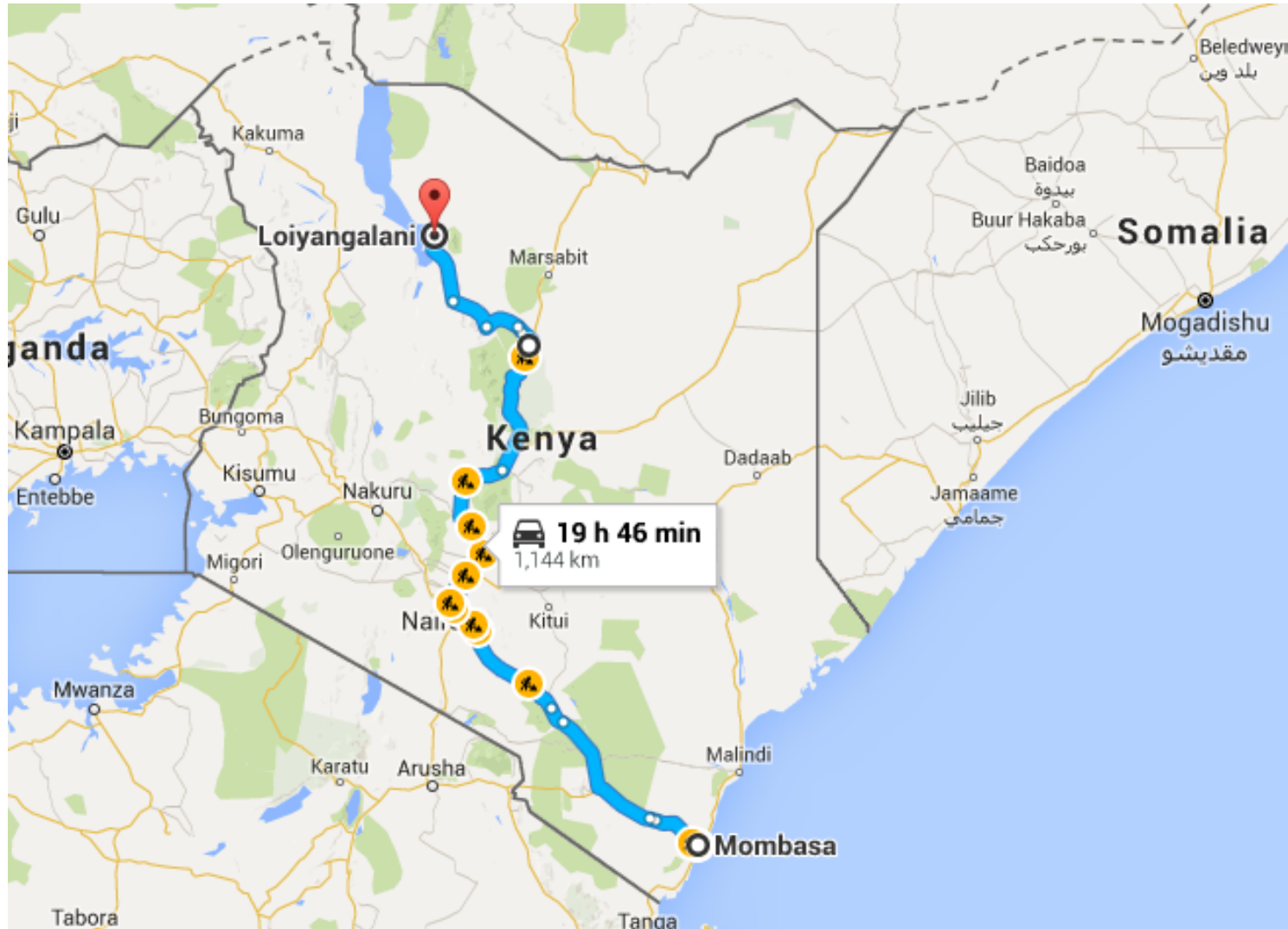
Route to Lake Turkana

Ca. 3 uger undervejs fra Tianjin til Mombasa



1200 km gennem Kenya

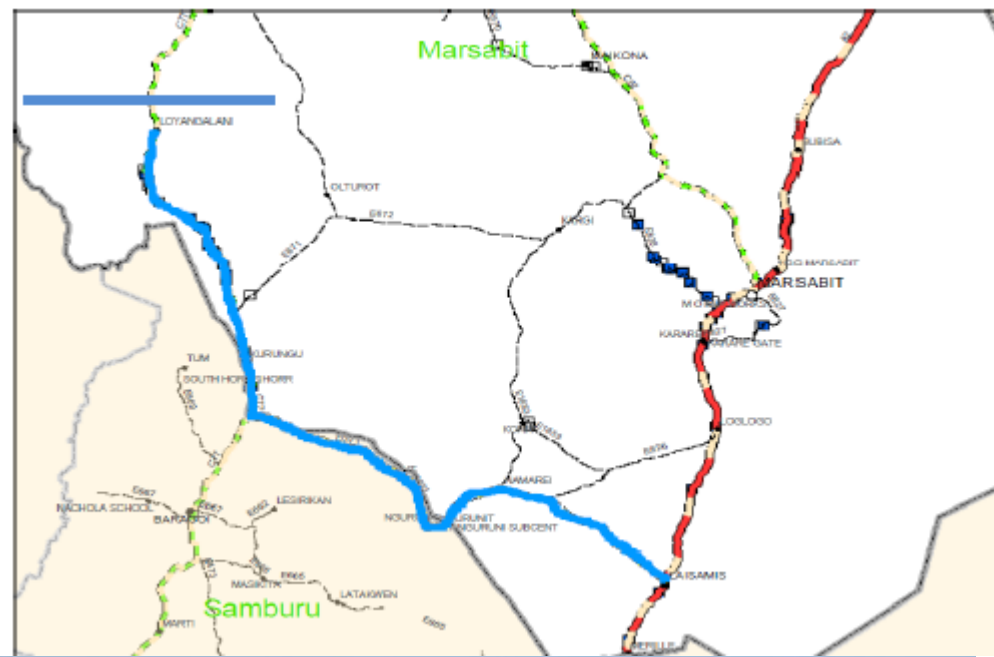
En uges kørsel – kun kørsel om dagen



Grus vej til site

200km ny anlagt/opdateret grusvej

Dagsrejse, med planlagte stop undervejs



Tower transport



Nested towers

Special løsning til Lake Turkana projektet



It's real



Wind. It means the world to us.™

Thank you for your attention

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