

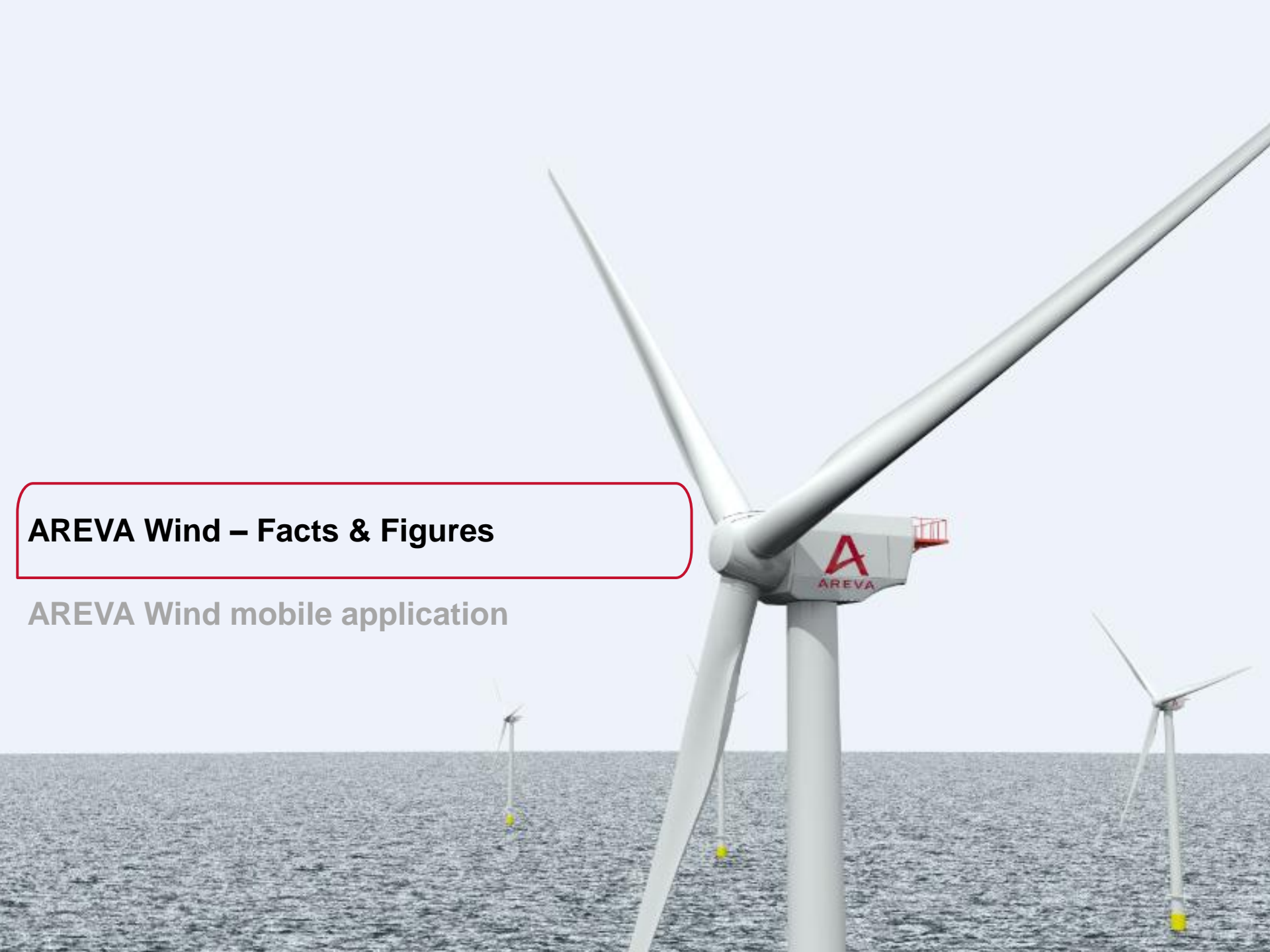
March, 2013



AREVA Wind – Serviceoptimierung per App

Martin Hildebrandt
Senior Sales Manager UM
AREVA Wind GmbH





AREVA Wind – Facts & Figures

AREVA Wind mobile application

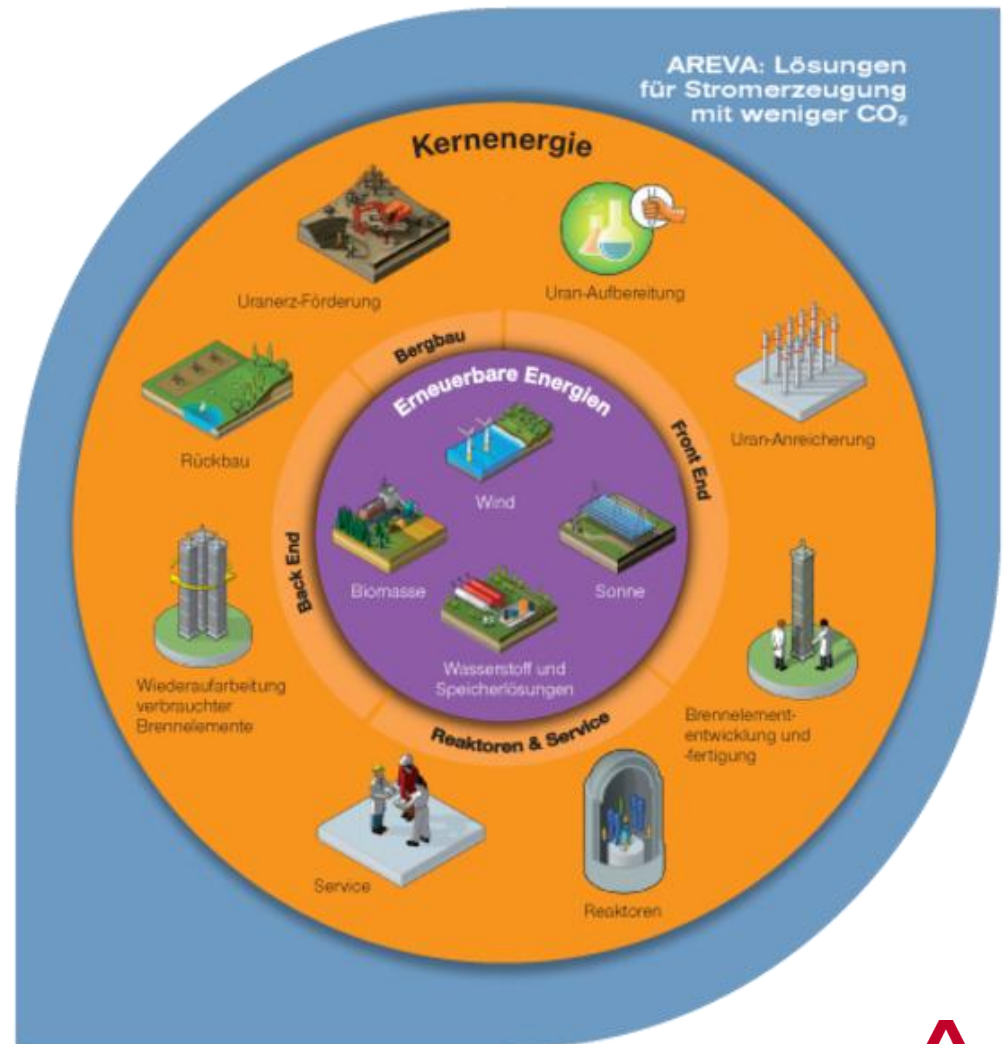
An energy mix that meets our customers' requirements

Nuclear and Renewables:

contributing synergistically to a reliable, economical, carbon-free energy mix

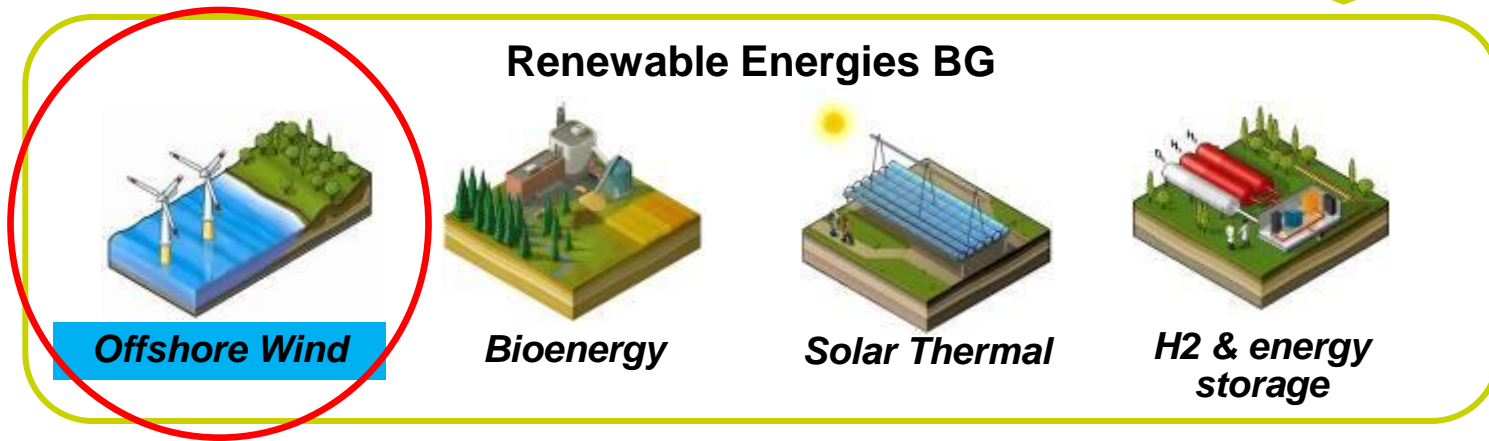
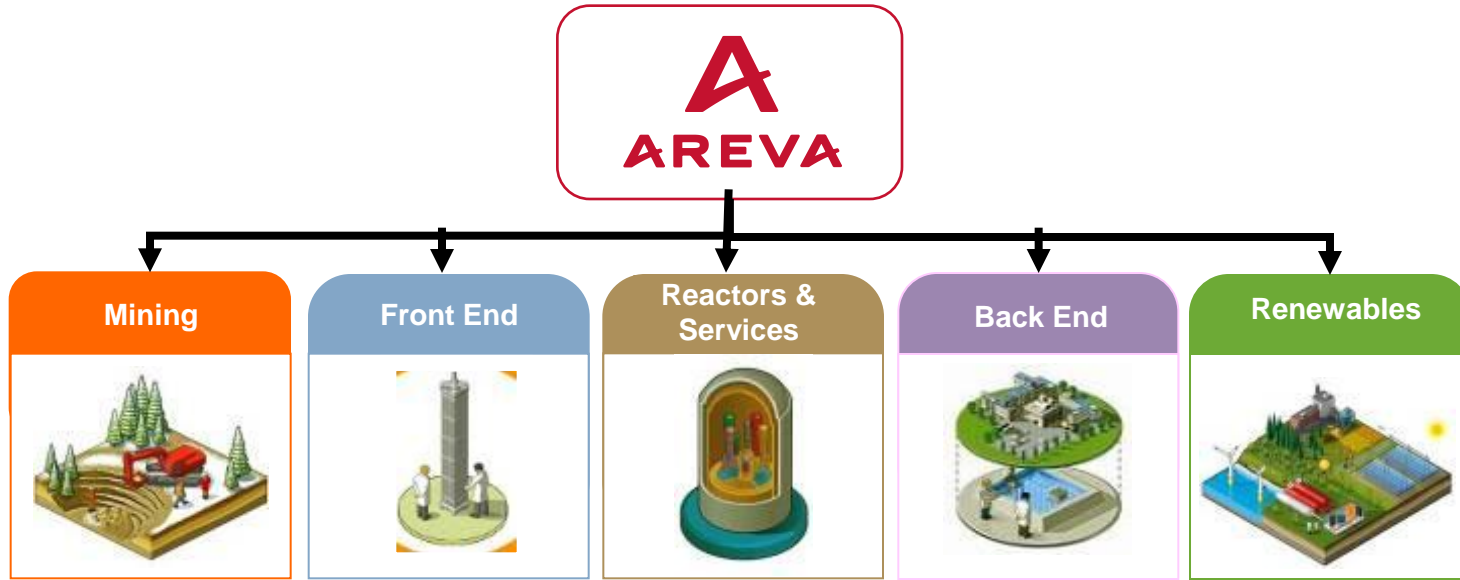
“Today, the world needs twice as much energy and half as much CO₂”

Dr. Rob Routs, Executive Director Oil Sands, Shell



5 business Groups

4 Renewable Business Units



EUROPEAN FOOTPRINTS

Production WTG

AREVA Wind GmbH, Bremerhaven

Test Bench



EUROPEAN FOOTPRINTS

Zertifikat



GL Systems Certification bescheinigt hiermit, dass das Unternehmen

AREVA Blades GmbH

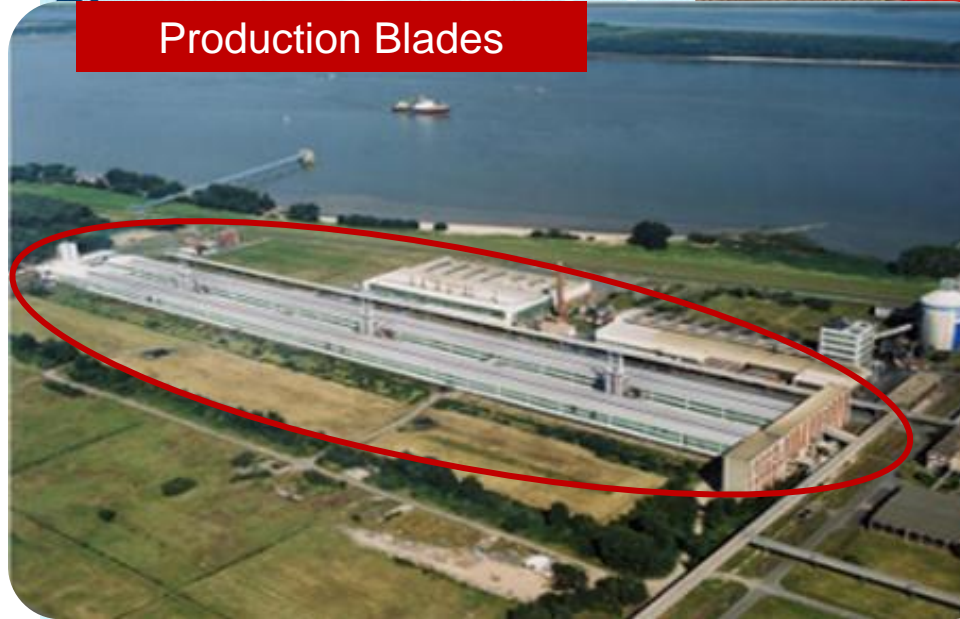
Johann-Rathje-Köser-Straße 7, D-21683 Stade

für den Geltungsbereich

Herstellung und Vertrieb von Rotorblättern für die Windindustrie
ein Managementsystem eingeführt hat und anwendet.



Production Blades



Germanischer Lloyd SE, Competence Centre Systems Certification, Brooktorikai 18, D-20457 Hamburg



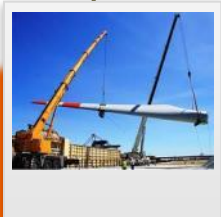
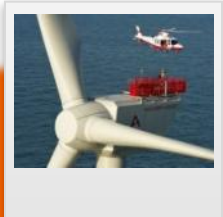
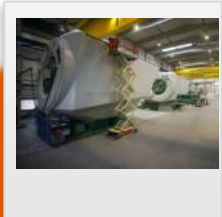
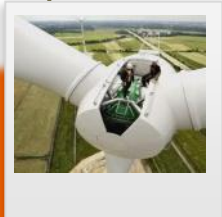
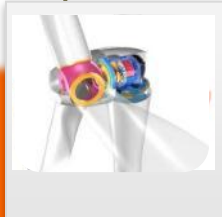
AREVA Wind from acquiring a start-up...

Late 90's
First patents by
Aerodyn for 5 MW
Multibrid™ wind
turbine

Dec. 2004
First M5000
prototype installed
in Bremerhaven

Oct. 2007
51% acquisition by
AREVA of Multibrid

Q4 2009
100% acquisition of PN
Rotor by AREVA



2001
Start of design work
on the M5000

Spring 2007
New production
facility in Bremerhaven

Q4 2009
Commissioning of alpha
ventus project

May 2010
AREVA share increase to
100% of Multibrid

... to supplying state-of-the
art offshore wind turbines...

Building leading experience and track record within the 5MW turbine segment

2004

Installation of first prototype turbine

Contributed with design testing and technology verification

2008

Two additional onshore turbines installed

Contributed with building know-how on erection sequences, lifting accessories, logistics, serial manufacturing

2008-2009

Onshore operational experiences

Experience from commissioning, operation and service go into preparation of offshore mission.
Development of service organisation.
Set-up of spare part stock

2009-2010

Offshore operational experiences

Validation and improvement of offshore service life-time management and spare parts concept



2006

Second prototype installed

Contributed with building know-how on tripods

2008

Implementation of full test stand for turbine control system

2009

EPC supply of six turbines to alpha ventus

Validation of lifting and transportation equipment, logistics concept and installation procedure and commissioning know-how

2010

alpha ventus nacelle swap

Validation and improvement of logistics concept and verification of turbine design and root-cause-analysis

THEY ALREADY PARTNER WITH US

e-on Alpha Ventus: **30MW**
EWE **VATTENFALL**

Trianel Borkum West II: **200MW**

SWM Global Tech 1: **400MW**
 Stadtwerke München
HSE
 DAS GANZE SEHEN

Windreich AG MEG1: **400MW**
 Windenergie seit 1999

IBERDROLA RENOVABLES Saint Briec: **500 MW**
 Wikinger: **350 MW**



Borkum West II Global Tech I

Multi-Lateral Banks

Trianel, European Investment Bank, IHSUGI, BWF, BWF

Regional Development Banks

kfw IPEX-BANK, NRW.BANK Wir fördern Ideen, kfw, RTM

Commercial Banks

HypoVereinsbank, NATIXIS, Deutsche Bank, NORD/LB, ASN Bank, SOCIETE GENERALE Corporate & Investment Banking, DEXIA, SEB, Helaba Landesbank Hessen-Thüringen, Rabobank, NIBC

About 400 AREVA turbines selected in major offshore wind farms in Europe

2014 to 2015



Deutsche Bucht*

42 turbines – 210MW
120km to shore

2013

Global Tech 1

80 turbines – 400MW
110km to shore

2014



MEG 1*

80 turbines – 400MW
41km to shore

2016

Wikinger*

~70 turbines – 350MW
40km to shore

2015 to 2017



St. Brieuc*

100 turbines – 500MW
23km to shore

2009

Alpha Ventus

6 turbines – 30MW
45km to shore

2013

Borkum West II*

40 turbines – 200MW
45km to shore

2004/06/08

Onshore

4 turbines – 20MW
Bremerhaven



→ INSTALLED: 50 MW
→ CONFIRMED: 1710 MW

* w/o financial close

AREVA M5000

Elected best “3.6MW+”-WTG 2012 by Windpower Monthly

WINDPOWER
MONTHLY

January 2013

► **Hybrid drive train solution**

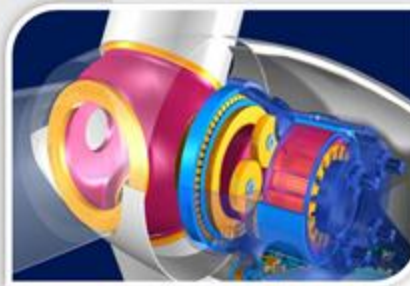
- + Benefit of Gearbox historical return on experience & low mechanical constraints for high reliability & low head mass
- + Lower rare-earth metals requirements than Direct Drive WTGs

► **Slide bearings for the gearbox shafts**

- + Compact design
- + Long service-life potential

► **Air treatment system creating overpressure**

- + High resistance to corrosive offshore environment



WINDPOWER
MONTHLY

“Clever [...] wind turbine technology”

“

M5000 enjoys increasing offshore popularity



M5000-116



1

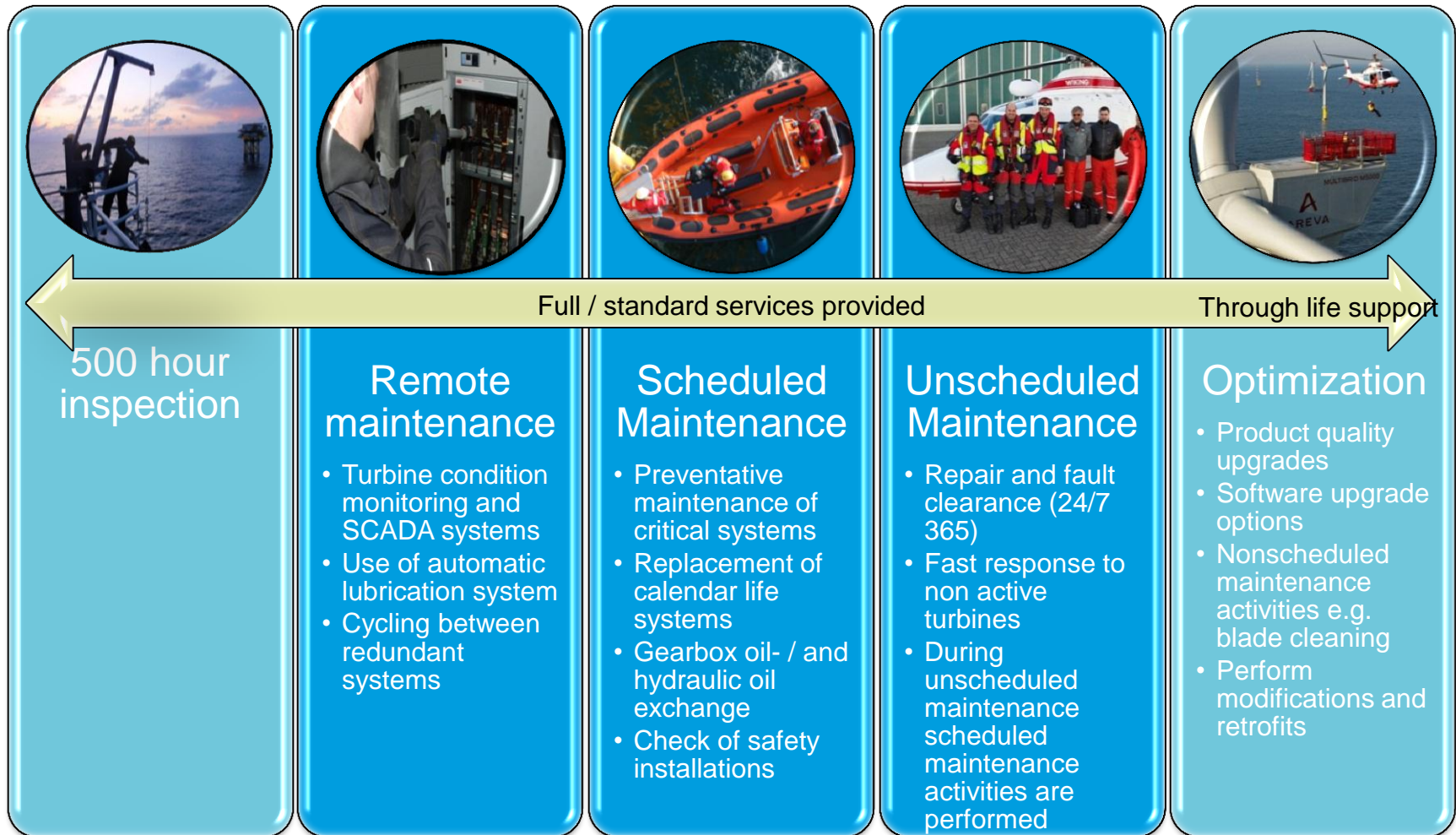


...HOW WE EXECUTE THE PROJECT



Increasing customer value through interface optimization and deep project knowledge.

Lifecycle management

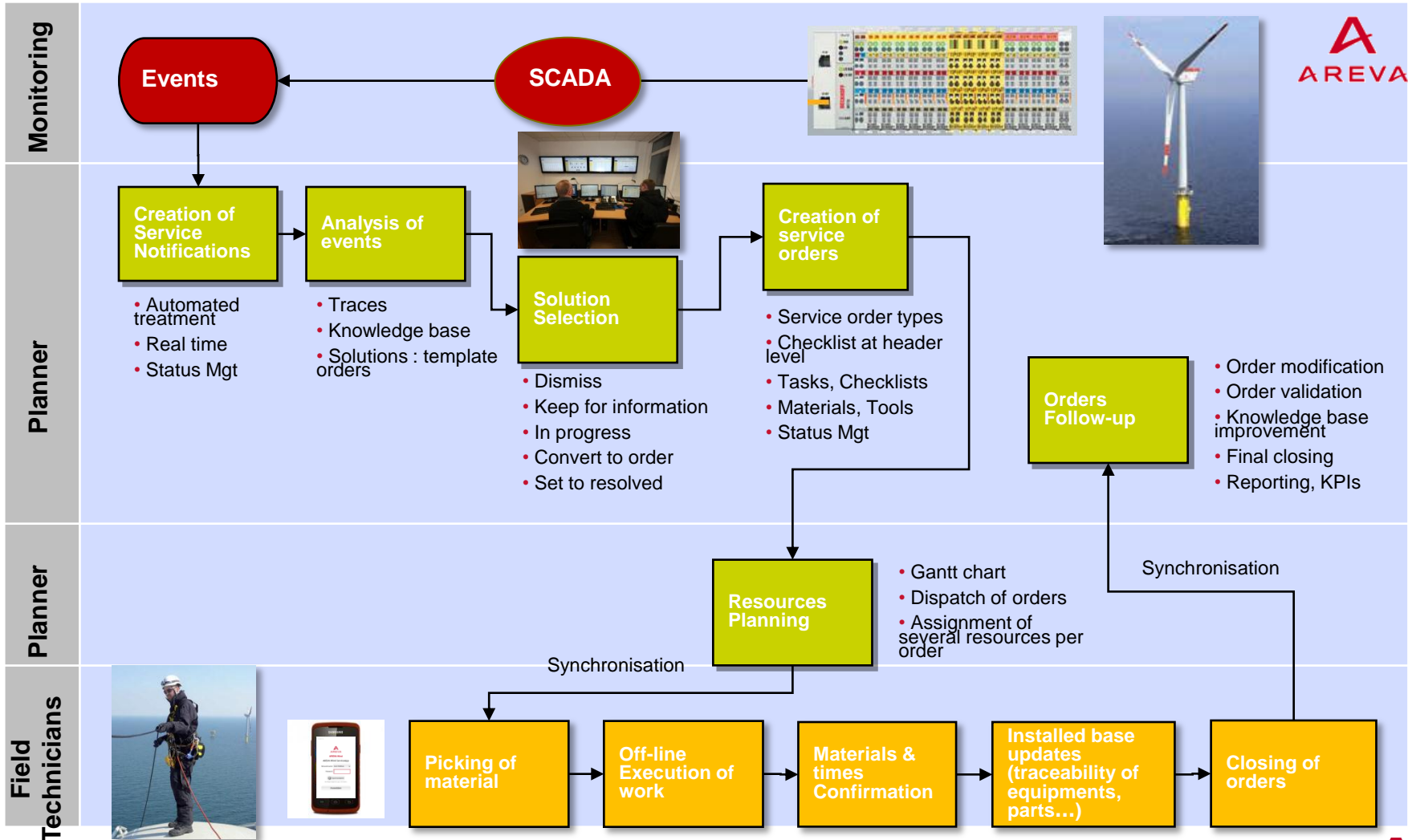




AREVA Wind – Facts & Figures

AREVA Wind mobile application

Corrective Maintenance Process



AREVA Wind L-mobile service management software



L-mobile

WIKIWÄCHTER | NEWS FEIND | MEIN HINZU | LOGIN

- Dashboard
- Fehlermeldungen
- Serviceaufträge**
- Geräteakten
- Mehr ▾

- Suche
- Stammdaten ▾
- Verwaltung ▾

Serviceauftrag 00102801

Typ 02-08-02-02 Entstörungsauftrag

Für Servicefall [57013811](#)

Anlage [050008](#) - AV09

Kunde [ALPHA VENTUS](#)

Auftragsgrund **Bremsbeläge und Bremskaliber Rotorbremskreis überprüfen**

Priorität 2

Kostenstelle **L.600006-C-02-01**

Komponente **Azimut**

Geplant am

Uwe Feind (ufeind) Ingo Schulz (ISchulz)

Verantwortlich: **Jörg Henning**

[Bearbeiten](#)

11.12.2012 15:17 - Jörg Henning

13.12.2012 13:35 - Fabian Stockhaus

- Frei zum Kommissionieren
- Eingeplant
- Techniker beendet
- AV beendet
- Rechnungsfreigabe





[Hinzufügen](#)

Artikel Nr.	Beschreibung	Soll	Ist	ME
 <input type="text"/>		<input type="text" value="1"/>	<input type="text" value="0"/>	<input checked="" type="checkbox"/>

Tätigkeit	Beschreibung	Plan	Ist	Status
 2-09-03	Bremsbeläge und Kaliber überprüfen	1,00	1,00	Erzeugt

  (0)



[Buchungen](#) [Checkliste](#) [Skills](#)



Datum	Von	Bis	Dauer [h]	Benutzername	Beschreibung	Bemerkung	Status
12.12.2012	11:30	12:00	0,50	ISchulz	Bremsbeläge und Kaliber überprüfen	Bremsbeläge gemessen	Beendet  
12.12.2012	11:30	12:00	0,50	ufeind	Bremsbeläge und Kaliber überprüfen	Bremsbeläge gemessen	Beendet  



[+ Folgeauftrag anlegen](#)



Voranqegangenen Auftrag zuweisen



Angefügte Dokumente



 Anordnung Rotorbremse AV09.docx 



 img-121213120427.pdf 



 Bremse1.JPG 



 Bremse2.JPG 

 Bremse3.JPG 

 Bremse4.JPG 

 Bremse5.JPG 

 Bremse6.JPG 


 Einsatz AV9 12.12.12.doc 

[Neues Dokument](#)

Geplante Techniker

Uwe Feind 

Ingo Schulz 




Geplante Fahrzeuge



Auftragsvorlage

Suche

 [Laden](#)

AREVA Wind mobile application


01.003.114

AREVA
AREVA Wind

AREVA Wind ServiceApp

Benutzername: Sven Holthuis

Passwort:

 Synchronisieren

Bei fehlgeschlagenem Login, hier klicken.

Anmelden

Einstellungen

Software und Firmware Informationen

Software Version: 01.003.114

Firmware Information: 2.3.3.XWJVI GT-I9000

WLAN

WLAN-Name: NETGEAR - 0

WLAN-Status: **Verbunden**

WLAN Einstellungen

Sprachauswahl

Deutsch Englisch Französisch

Zurücksetzen

!! Datenbank zurücksetzen !!

Software

Software aktualisieren

Sven Holthuis

Hauptmenü



Einstellungen

Main menu

- ▶ Login for each service technician
- ▶ Main menu with all settings for languages and WiFi status
- ▶ Button for synchronization
- ▶ All wind farms will be available on the mobile device
- ▶ Service technician can choose the wind farm for the planned operations
- ▶ An overview of all installed wind turbines within the wind farm will appear

Windparkauswahl

01 ALPHAVENTUS

02 AREVA Wind BHV

03 Borkum West 2

04 EP I Bauzentrum

05 Global Tech 1

06 LEHE

07 SPECKENBÜTTEL

08 Teststand BHV

Park: ALPHAVENTUS

1001 AV12

1002 AV11

1003 AV10

1004 AV09

1005 AV08

1006 AV07

1007 AV12

AREVA Wind mobile application

Overview of service orders

- ▶ Selection of the wind turbine will give the service technician an overview of the open service orders
- ▶ For each server order there will be a service order code for identification
- ▶ Service technician can “log in” to the service order and will get a more detailed overview of the task which has to be performed
- ▶ Service technician can set different options within the detailed overview like “service order closed”

A Anlage: AV12

- 00101434 22.03.2012 00:00
Rotorbremse A kann nicht geschlossen werden : Ansteuerung Schliessen
Rotorbremse A und Druck Rotorbremse < analoger Parameter 12023 nach 15 Sekunden
- 00101530 Kein Datum gesetzt
Leckage im Gondelkeller
- 00101580 Kein Datum gesetzt
Wartung 2012 AV 12
- 00101672 19.06.2012 00:00
Nachtkonzept Nachttest
- 00102232 Kein Datum gesetzt
Flugbefuerung Ausfall
- Sven Holthuis 102602 16.11.2012 00:00

A AV12: 00101434

Auftrag Arbeitspaket Werkzeug Material

Auftragsnummer:
00101434

Datum:
22.03.2012 00:00

Fehlernummer:

Beschreibung:
Rotorbremse A kann nicht geschlossen werden : Ansteuerung Schliessen
Rotorbremse A und Druck Rotorbremse < analoger Parameter 12023 nach 15 Sekunden

Status:
Eingeplant

Auftragsstatus durch Techniker setzen:
Teilweise beendet Beendet

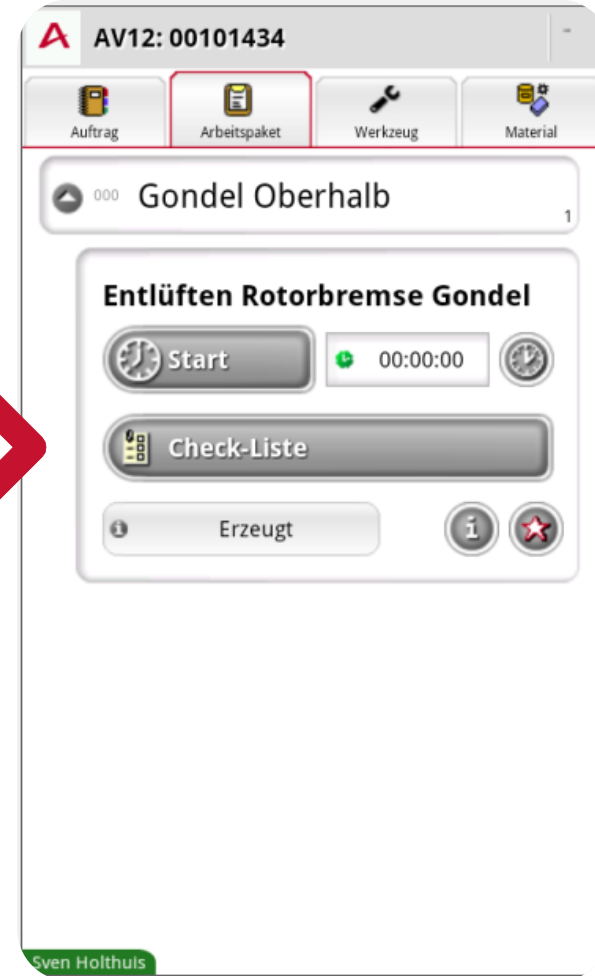
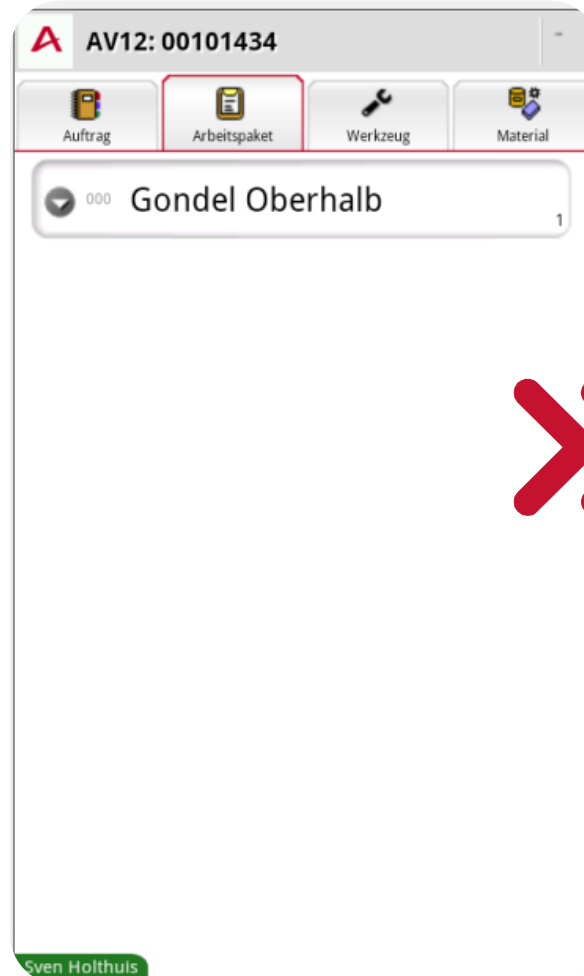
Details:
Notizen

Sven Holthuis

AREVA Wind mobile application

Details service order

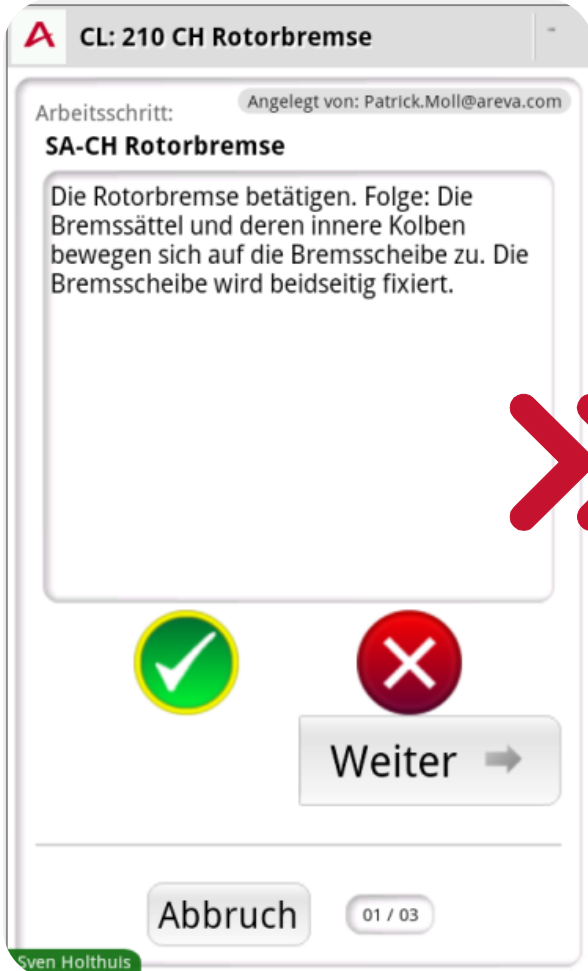
- ▶ Detailed description of tasks which has to be performed
- ▶ Works can be started and stopped with time stamps within the mobile application
- ▶ Checklist of the service order could be used



AREVA Wind mobile application

Checklists

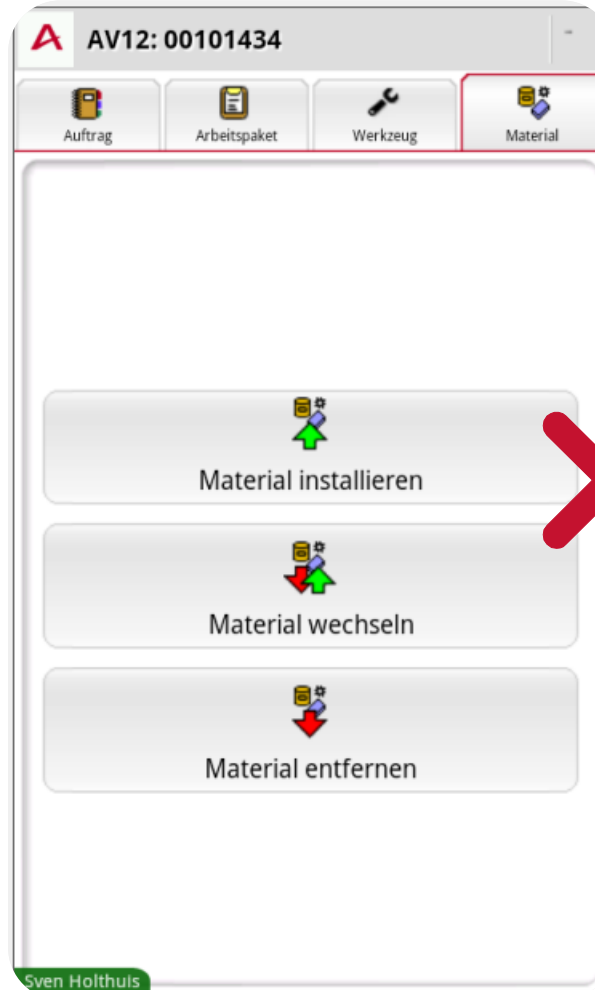
- ▶ Checklist with detailed work steps for the service order has to be performed
- ▶ The single steps of the work instructions has to be fulfilled



AREVA Wind mobile application

Material management

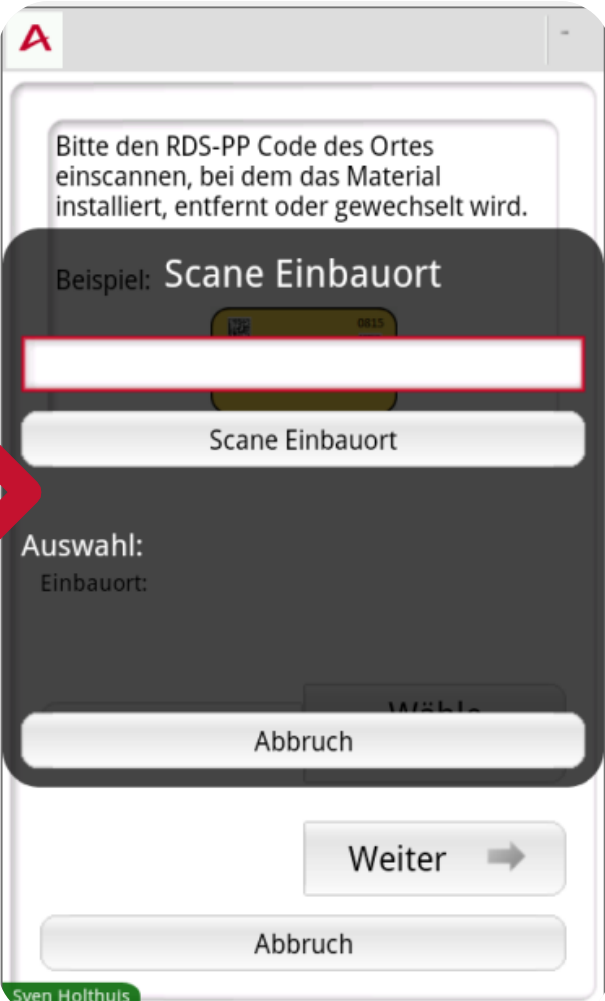
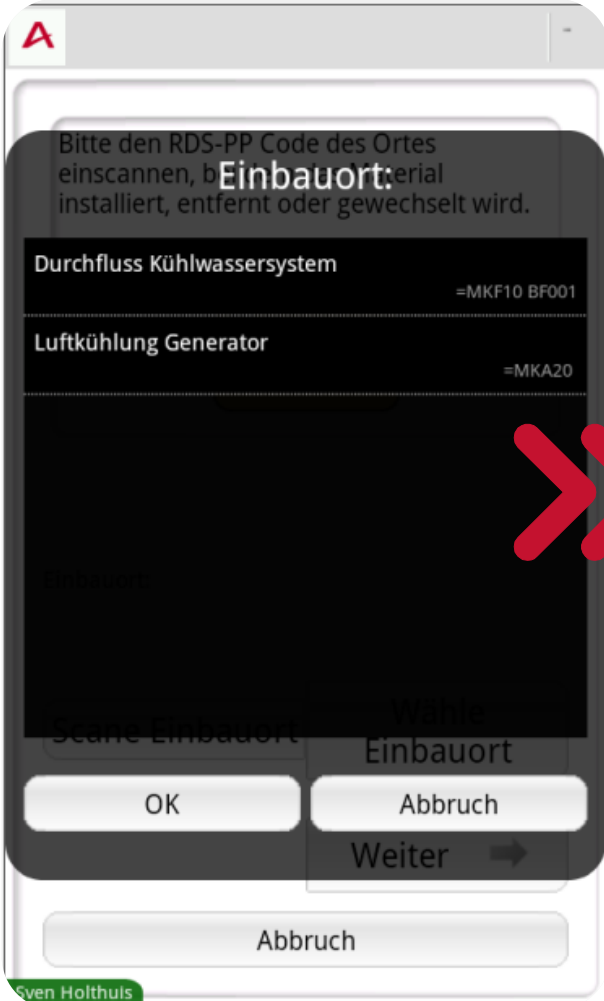
- ▶ Materials which will be used for the service order could be changed
- ▶ Service technicians is able to install, remove or change material within the mobile application
- ▶ Also locations could be defined with RDS-PP barcodes



AREVA Wind mobile application

Locations

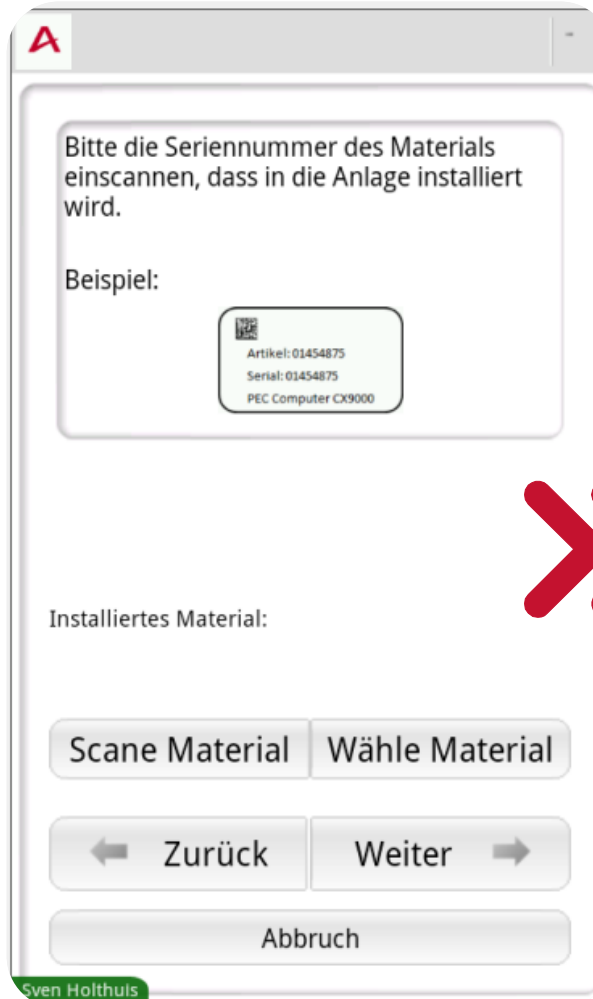
- ▶ Location of component with RDS-PP barcode could be scanned
- ▶ Backup possibility to put in the the location manually



AREVA Wind mobile application

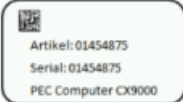
Serial numbers

- ▶ Serial numbers of spare parts or components could be scanned with the mobile application
- ▶ A link between RDS-PP product code and serial number will be available



Bitte die Seriennummer des Materials einscannen, dass in die Anlage installiert wird.

Beispiel:



Artikel: 01454875
Serial: 01454875
PEC Computer CX9000

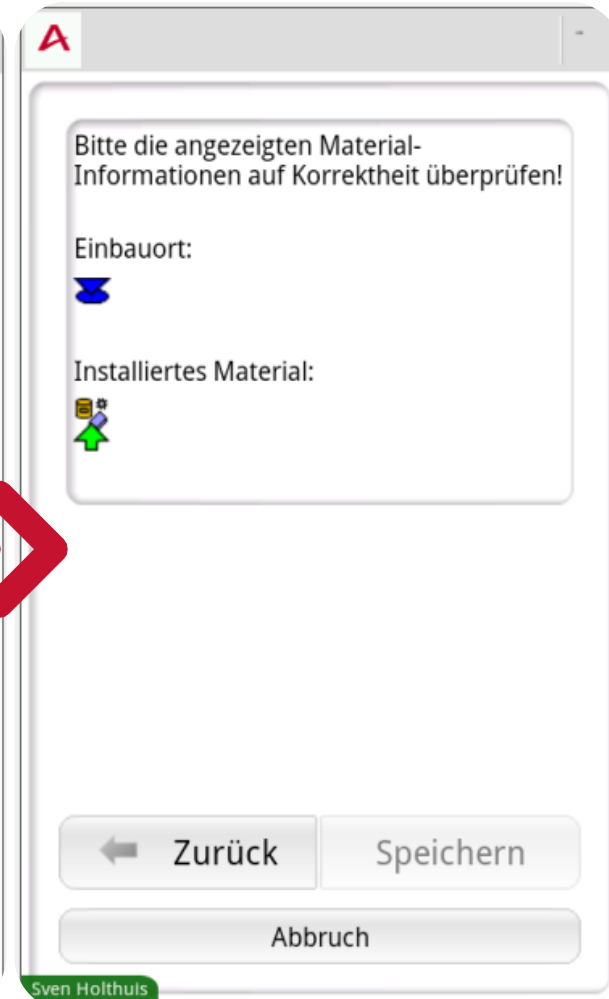
Installiertes Material:

Scane Material Wähle Material


← Zurück Weiter →


Abbruch

Sven Holthuis



Bitte die angezeigten Material-Informationen auf Korrektheit überprüfen!

Einbauort:


Installiertes Material:


← Zurück Speichern

Abbruch

Sven Holthuis



Thank you for your attention!



© Copyright

“Our job is to meet the world’s growing need for energy in a way that keeps the world safe, clean and liveable for our children... their children... and their children’s children.”

Dr. Rob Routs, Executive Director Oil Sands, Shell